

DR. T. B. WELCH,
EDITOR FIRST SEVENTEEN VOLUMES OF ITEMS OF INTEREST.



The Technique Necessary for Making Good Dental Skiagraphs.

By WESTON A. PRICE, D.D.S., M.E.

The procedure for making good dental skiagraphs is not much more exacting and difficult than many of the everyday operations of both the dentist and surgeon. There are doubtless other methods of obtaining excellent results that may be quite as good, but I shall give as briefly as possible the technique which I use.

We must use a relatively high penetration and
The Generator. a large volume. The high penetration is essential because our contrasts are to be secured between all dense substances, bone and more dense bone, or tooth substance and root fillings, whereas in ordinary skiagraphy the contrasts are chiefly between flesh and bone. The large volume is essential in order to make short exposures which are necessary to secure the best definition. The two qualities of high penetration and large volume make it necessary that we have a very powerful generator for which I prefer a large coil and the Wehnelt interrupter.

It is very desirable that the apparatus be so conveniently arranged that the patient may be seated in the dental chair which allows of a wide range of positions with comfort to the patient and firmness and steadiness of the head not easily secured in any ordinary chair. The difference in

ITEMS OF INTEREST

the results is about the difference between the photographic work of the man who holds his camera in his hand to make a bulb exposure and the man who sets up his tripod. It is a question of showing with exactness of definition and detail either the cellular structure of the bone and sharply defined alveolar walls or simply a blurred indefinite outline of the structures.

The switch for turning on the current should be very conveniently arranged so that the operator can easily turn on and off the current while holding the film in position. In some cases I find that the patient can hold the film satisfactorily, but in most cases I can get better results if I hold it myself.

The Tube. The selection of the tube is, if possible, more exacting than the generator. As stated before, the conditions we are skiagraphing and the information we desire are such as to require a tube giving a relatively high penetration. Of course the penetration of tubes is not in constant proportion to the spark gap they will back up, though quite regularly so with tubes exhausted from the same gases. For the dental work we require a tube of a penetration sufficient to make the bones of the hand look quite white and transparent, which will back up from a four to an eight-inch spark this soft tissue gap. Most of the failures in dental work have come from using too low a penetration. When locating abscesses to produce a clear definition generally use a little lower penetration than for locating root fillings or broaches or even impacted teeth, and all of these will be modified a little to advantage for older or young patients, using a little higher penetration for old patients. The quality of a high penetration tube is quite easily secured if you select the tube yourself from a number, which I generally do, or it can be entrusted to a good dealer whom you carefully instruct. These high penetration tubes, or so-called hard tubes, can often be secured from operators who do general X-ray work for which they desire the medium and lower penetration, the tendency of tubes in use being to get higher.

But tubes for this work must have another important quality which is much more difficult to obtain, and that is being capable of carrying a very large current without overheating the anti-cathode or materially lowering the vacuum of the tube. The ordinary tubes with a thin or medium thick sheet of platinum anti-cathode are not satisfactory for the best results in dental work because they will not stand this large volume. We should use a tube with some device for absorbing the heat from the platinum which may be either those backed with a heavy mass of metal or those water cooled. It need not be a circulating stream of water but a reservoir of it in a special receptacle around the base of the anti-cathode.

Some may ask why not be content with using a tube giving smaller volume of X-rays and give a longer exposure? Because we cannot get the best definition showing the cellular structure of the bones except by avoiding the slight distortion due to the unavoidable movement of the parts during a longer exposure from breathing, etc. A very slight movement of the patient is equivalent to a considerable movement of the tube and is sufficient to destroy the fine definition of the cellular structure of the bone. I prefer a volume such as will skiagraph the hand in half a second.

The tube stand must be such as will allow of any easy and wide variation of positions and be free from vibrations.

The difference in the densities of the dental structures between which we must produce photographic contrasts is so slight that it makes it practically impossible to get choice results with ordinary photographic film. We must pile up the light contrast by using several layers of emulsion on the same film. Nearly four years ago I put a great deal of work on the production of such a film which has given excellent success and I believe is in general use for this work and is being manufactured by the M. A. Seed Dry Plate Co., of St. Louis. It has three layers of emulsion one upon the other and all are acted upon at once by the X-rays. It can be secured from them direct by specifying by my name or by asking for the special dental film. The celluloid is thick enough to prevent curling and yet sufficiently flexible for the purpose and is selected from specially prepared smooth polished stock free from scratches. The conditions under which we use it require it to be covered with a waterproof, light-proof flexible container, and for this purpose I have found nothing so satisfactory and convenient as the unvulcanized black dental rubber, which can be secured at any dental supply house. Buy the thin, made by Dougherty. For two reasons I put in a sheet of sensitive bromide paper, with its face to that of the film to protect the emulsion of the film from the action of the sulphur of the rubber and to give me a positive of the case within one or two minutes which may yield the information desired and will show accurately whether the negative covers the area desired, and if the exposure will be right. These dental films are made up quickly by placing a sheet of a 4 x 5 or 5 x 7 sensitive bromide paper on a sheet of film the same size, face to face, and then taking the paraffined linen from one side of the rubber and touching the edges of the sheets together. Use three sheets for a 4 x 5. They will stick very tenaciously; then folding this over the film and bromide paper press the edges together to seal them in. Mark a 4 x 5 into nine small divisions varying a little in size and cut through with shears and fold the rubber from the film side over the edge

ITEMS OF INTEREST

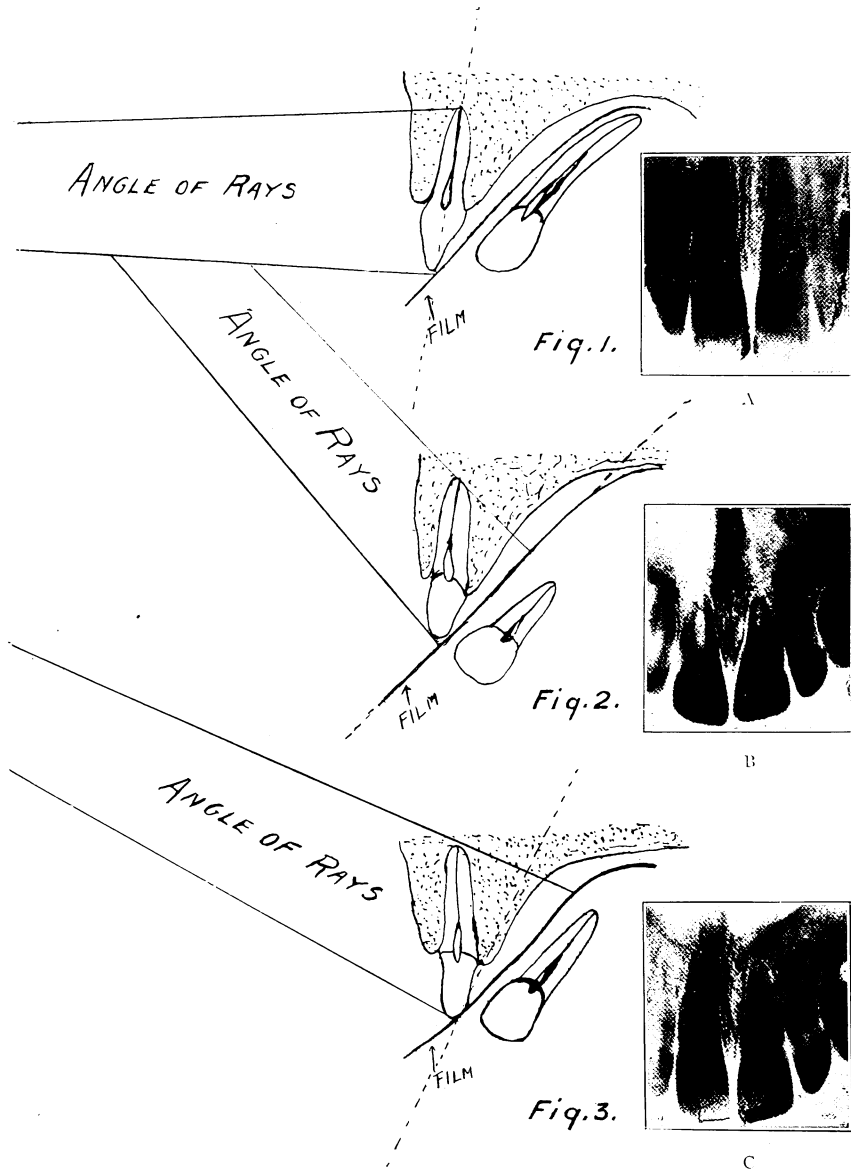
to touch the rubber of the other side where it will adhere tightly. Snip the sharp corners off the film and fold the rubber over them. These films will keep in good conditions for weeks until needed. To keep them from sticking place them in a piece of the paraffined linen taken from the rubber. When making the exposure I place a small number (made from fine lead fuse wire and the figures stuck onto a piece of heavy paper with mucilage) against the rubber where it will stick. This number is recorded with the record of the case and appears not only on the negative but on all prints made from it. This is most important in dental skiagraphs which are so similar in general, and a quantity of them soon accumulates. As the film is extremely sensitive to daylight as well as to the X-ray, it is exceedingly important to take the greatest care that it be kept in a lead box and not in a hot place, and when preparing use the most subdued ruby light. This is very essential.

The Exposure. For making the exposure I prefer the patient to be in the dental chair because of the ease in adjustment of the patient and rigid support for the head.

Much skill is required to place the film and tube in the proper relations to the teeth to produce a correct shadow of the parts without distortion. We all know how seldom our own shadows represent our true height or shape because the source of the light and the surface receiving the shadow are not in the proper relation to the object casting the shadow. Each of these three factors must be in correct relation to the other two, but one of them, the teeth and surrounding structure casting the shadow, are by their peculiar position practically fixed and the others must therefore be adjusted to them. The shape of the arch prevents one placing the film in the best position to receive the shadow, viz.: in parallel planes. This produces a distortion which must be overcome by placing the source of the light in just the position that will shorten the shadow just the extent that will correct the elongation of it produced by the film not being in a parallel plane to the roots of the teeth. We do not have this trouble with the lower bicuspid and molars, but we do with the lower cuspids and incisors and with all the upper teeth.

The correct image can be secured in two ways, by holding the film away from the crowns of the teeth the same distance that it is away from the roots or by raising the source of the rays. The former is more difficult and the results not more satisfactory. The three diagrams, Figs. 1, 2 and 3, will illustrate this distortion and how to correct it. No. 1 shows diagrammatically the relation of the tooth and the film to each other and the result of taking a skiagraph with the tube opposite and at right angles

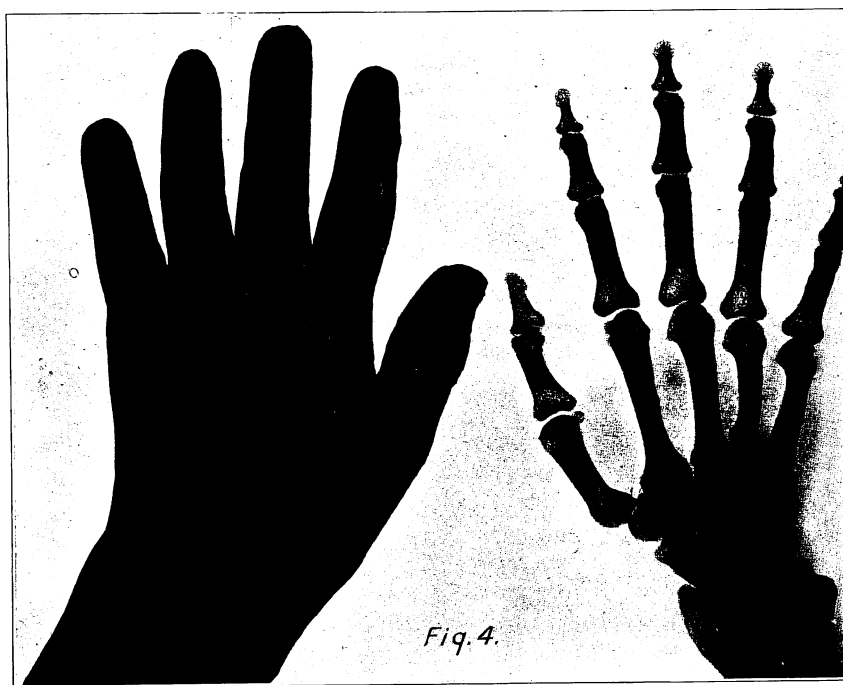
to the plane of the teeth and shows the distortion by elongating the shadow of the root. The skiagraph A. opposite was made with the tube in this



position and you will notice the very long roots, nearly twice the correct length. Fig. 2 shows the distortion by placing the tube so that the rays

ITEMS OF INTEREST

fall at right angles to the plane of the film, thus greatly shortening the shadow of the roots, and the skiagraph B. opposite shows the same teeth as A., but taken with this position of the tube. The next, Fig. 3, shows the correct position for the tube in order to produce a shadow of the teeth that will have the minimum of distortion, and the skiagraph C. opposite shows the same teeth as A. and B. taken from this position, and you will note easily the difference in the results. This correct position of the tube is easily ascertained in two ways. It is just half way between the two



positions which are at right angles to the long axis of the teeth and to the film. This position is also at right angles to a plane half way between that of the long axis of the teeth and of the film. This simple rule holds for all teeth and for any shape of arch except that care must be taken not to curve or bow the film unnecessarily. There are a few positions, like the lower anterior incisors and cuspids where it is easier sometimes to place the film in a plane parallel to that of the teeth and place the tube at right angles to both, then to adjust as above. Occasionally it is difficult to place the film for impacted lower third molars owing to the sensitiveness of the fauces. Dr. Dwight M. Clapp suggests using a mouth mirror frame to

hold the film. I believe this is a good idea, though I have never had a case where I could not hold it quite comfortably with my finger.

**Protection for
the Hands
from the X-Rays.**

About a year ago I feared I would have to give up the use of the Roentgen Rays for a time, because my hands were getting so sensitive to irritation from it, but I was fortunately able to correct the difficulty very satisfactorily. I devised an opaque cloth and an opaque rubber sheeting and opaque rubber gloves that have quite perfectly relieved the trouble. My hands do not trouble me in the least since using this protection. The effect of the X-rays being accumulative, the operator is in a hundredfold more danger than the patient when making dental skiagraphs. I have never had a sign of irritation of any kind on any patient from making dental skiagraphs. To protect my hand from the X-rays when holding the film I place a piece of the opaque rubber sheeting over it just before turning on the current, and I use a shield over the tube made of the same material for part of my work. When experimenting or working around the tube the gloves are a perfect protection. This skiagraph, Fig. 4, shows one hand with the glove on and the other off.

**Special
Development.**

This triple coated film requires special development. In order to secure the contrast of all three layers of the emulsion without fogging the upper one it is necessary to have the temperature and strength of the developer very carefully adjusted, about 75° in the winter and 70° in the summer, and the development must be slow enough to allow the lower layer of emulsion to be acted upon before the upper one is overdeveloped. Since our picture is purely a shadow I develop for strong contrasts, producing dense negatives and take from 20 to 40 minutes for development. I prefer a Metol-Hydroquinone developer because with the necessary slow development it is very free from stain. There is a tendency for a lustrous, thin metallic deposit of silver to be deposited on the surface of the film after long development, which, if not removed, will very greatly impair the printing qualities of the negatives. It can be quite readily removed by rubbing with a tuft or ball of cotton. The bromide paper will develop in from half a minute to two minutes in the same developer, but must have a special fixer, or use the velox fixer. The film should fix for at least thirty minutes and the negative should not be held in the strong light of an electric or mantle gas light until dry. The image will not appear distinctly on the back when developing. Care should be taken to wash the film in running water for five minutes between the developer and fixer. I use the following developing and fixing formulae:

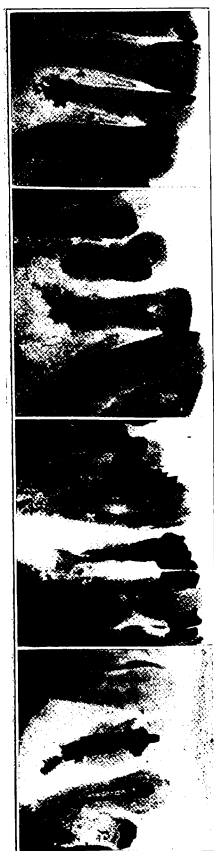


Fig. 5.



Fig. 6.



D

C

B

A

Fig. 7.

EXCLUSIVE CONTRIBUTIONS

METOL-HYDRO DEVELOPER.

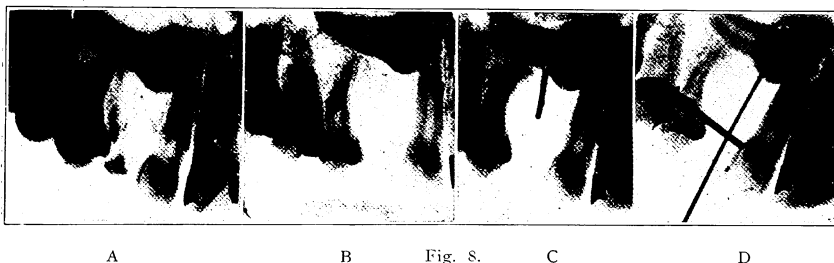
A.		B.	
Water	16 oz.	Water	16 oz.
Metol.....	30 gr.	Potassium bromide.....	15 gr.
Hydroquinone	30 gr.	Sodium carbonate (dry). .	130 gr.
Sodium sulphite (dry)	130 gr.		

If the crystalized sulphite and carbonate are used take twice as much as the formula calls for. To develop take equals parts of A. and B. The developer should not be lower than 75° F. in winter and not higher than 70° F. in summer.

FIXING BATH.

A.		B.	
Water	96 oz.	Water	32 oz.
Hypo	2 lbs.	Chrome alum.....	2 oz.
Sulphite of soda (crystals)...	4 oz.	Sulphuric acid.....	¼ oz.

After they are thoroughly dissolved, pour A. into B. while stirring A. rapidly. As the Chrome alum dissolves slowly, a stock solution of B. can be made up. This fixer may be used repeatedly.



A

B

Fig. 8.

C

D

I will show a few lantern slides illustrating the information that may be secured and bring out some details of method as they are shown.

Fig. 5 shows a collection of diseased roots, the first two with extensive absorption, and the last two with extensive deposits on the roots.

Fig. 6 shows the right and left cuspid and bicuspid region of both upper and lower jaws of a boy 12 years old. The temporary cuspids and molars are all in place and it is a problem whether their successors will ever erupt. The skiagraphs show a strange condition. The cuspids are all forming but only half of the bicuspids. Only one of the four right bicuspids has formed.

Fig. 7 shows the finding and the steps of correction of a strayed lower bicuspid. A. shows this second bicuspid more than an inch from its proper position and on its side. The gum line is dotted in. B. shows the anchorages to draw it up into position, and C. shows it tipped up to its proper direction. D. shows its articulation which has since improved.

ITEMS OF INTEREST

Fig. 8. A. shows the location of the unerupted cuspid and its relation to the temporary marked T. B. shows the same after some space had been secured and an opening made to the tooth. C. shows the first anchorage; it is too near to the neck of this tooth, and D. shows that the last anchorage pit is in the crown in good position. It will not be long now before it will not require the X-rays to see the tooth.



A

Fig. 9.

B

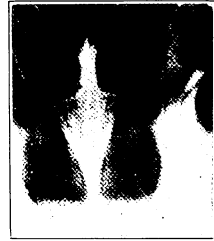
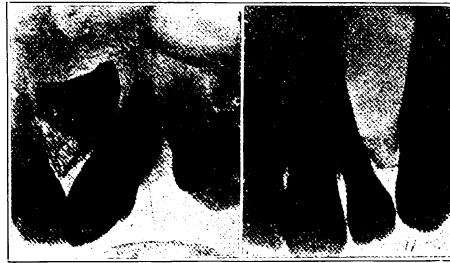


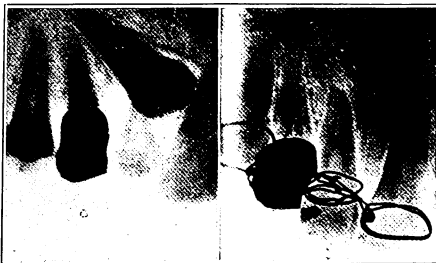
Fig. 10.



A

Fig. 11.

B



A

Fig. 12.

B



A

Fig. 13.

B

Fig. 9 shows two very interesting lower third molars. A. shows a third molar impacted against the second molar and causing a great deal of severe neuralgia by the impingement of the roots of the third molar as they are developing backward against the inferior dental nerve, the canal

of which is shown. B. shows a remarkable condition. The patient had a fistula on his face near the corner of the jaw, the cause of which could not be determined by his physicians. The skiagraph shows an imbedded third molar which has extensive decay and is abscessed at the end of its roots, from which abscess the external fistula came.

Fig. 10 shows the condition of a girl, age 14, where both the permanent laterals and cuspids were missing. The laterals have never formed and the cuspids have developed forward and are lying over the centrals.

Fig. 11 shows two cases of tumor. A. was thought to be an osteoma but proved to be a supernumerary developing between the cuspid and lateral. Case B. was thought to be a supernumerary tooth developing over the cuspid and lateral, but proves not to contain a tooth but is a sarcoma. Note how the roots of the cuspid and lateral are pushed apart and the bone is less opaque.

Fig. 11. A. shows a missing cuspid imbedded in the bone and the same tooth after being regulated to position where it was being held with platinum wire when this picture AB. was taken.

Fig. 12 shows what was probably the first skiagraph made in this country with a Radium compound, and probably the first in the world of the teeth. I made it May 6, 1900. A. shows the skiagraph of the teeth made with the radium compound, and B. shows the skiagraph of the same teeth made with the X-rays. You will notice marked difference in penetration of the two kinds of rays.

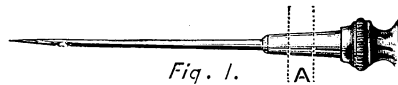
A Modified Needle for Pressure Anaesthesia.

By Dr. J. ALLEN JOHNSON, Indianapolis, Ind.

The failure to obtain complete anæsthesia of the dental pulp, where the usual method of obtaining desired pressure (vulcanizable rubber) is employed, is often attributable to the form of the cavity permitting an unclosed margin with consequent escape of the anæsthetizing fluid. This condition is most often found in disto-approximal cavities where the interdental space is more than ordinarily limited and in those cavities extending much below the gum margin. In small cavities of this class as in those more favorable to this method of pressure anæsthesia, there is ever present an element of danger to the patient, especially the young or delicate, in the use of a saturated solution of cocaine hydrochlorate, not that the danger lies in absorption through the dental pulp, although a number of cases of cocaine poisoning were reported from this cause at the time cata-

ITEMS OF INTEREST

phoresis was in vogue, and the dental societies were kept busy for a time discussing the matter; but from the escaping into the mouth of the cocaine solution and its consequent absorption by the mucous surfaces therein. While it has not been my misfortune to experience bad results from this cause, yet the danger is there, and the use of cocaine for the immediate extirpation of the pulp is a comparatively new method, and it is the duty of each dentist to stand between his patient and danger.



A careful dentist will use the rubber dam in performing this operation, but in many cases the dam cannot be used, and it is to this class of cases I more especially refer. Working on the theory that to produce anæsthesia of the pulp a saturated solution of cocaine is unnecessary, provided sufficient pressure may be obtained to force the fluid to the apical foramen. I have modified the form of the ordinary long reinforced hypodermic needle so that with it the local anæsthetic used by me in extracting is made to do all and more than I could do with the saturated solution following the common method. In this manner I use analgine, which contains but one-half of one per cent of cocaine; I dare say any similar solution would give the same results.

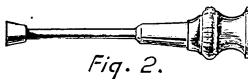


Fig. 2.

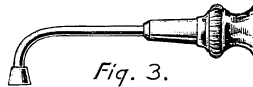


Fig. 3.

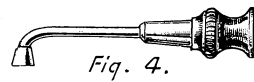


Fig. 4.

I find this method especially adapted to the treatment of children's teeth, for as a rule the dam cannot be used and all danger from the solution escaping into the mouth is eliminated. Every dentist will find in his cabinet abundant material with which to make the points to which I have referred and now will describe.

Special Syringe for Cocaine Anaesthesia.

From the base of an old point, make a section which will be bell-shaped (Fig. 1 a). Selecting another needle, remove the steel point and thread the end of the reinforcement to screw into the bell-shaped point just described, and the instrument is complete.

Three of these points (Figs. 2, 3, 4) have answered in the majority of cases. The angles may be changed at will by slight bending of the stems. It is unnecessary to say that these points are used with the regular syringe. In using this instrument, apply the dam where possible as an aseptic

precaution. Dry the cavity as well as permissable, apply Sanguetine chlorid (lilly) or adrenalin, wiping the cavity with carbolic acid. Now from a sheet of unvulcanized rubber, cut a disk large enough to amply cover the point of exposure. With rubber dam punch, make a small hole in the center of this disk of rubber, which you will now slightly coat with cavitine varnish or chloropercha and place over exposure so that the central opening is directly over the point of exposure. (Fig. 5.)



Fig. 5.

It only remains now to make application of the bell-shaped point over the hole in the disk and gradually get the pressure necessary to force the solution throughout the entire pulp. It is now almost a year since I adopted this method and trust others of the profession may have as good results as I have had in its application.

Pressure Anaesthesia.

By Dr. J. J. E. DE VRIES, Amsterdam, Holland.

Reading in the last issue of ITEMS OF INTEREST several articles on pressure anæsthesia, it will perhaps be interesting to you to hear that on this side of the ocean this excellent method of extirpating pulps is very much in use, the number of dentists following this operation increasing every day. I have used pressure anæsthesia in connection with cocaine for over four years, and am really very much pleased with the results. The hemorrhage after extirpation was the only unpleasant feature, often requiring much time to be controlled. Since November, 1902, I have used cocaine and adrenalin, changing several times the formula. For about six months I have relied on the following solution, which, if kept in a dark, well closed glass stoppered bottle, keeps all right for months.

Sol. Adrenalin 1/1000—5. (Parke Davis)
Hydro Chl. Cocaine. 1.

ITEMS OF INTEREST

My *modus operandi* is as follows: Syringe cavity several times with a weak Lysol solution (1/1000). Put on rubber dam directly. Wash out cavity with Lysol, dry with cotton and place in the cavity a small piece of cotton with adrenalin-cocaine, leaving it there for from three to five minutes. Excavating with no pain at all is possible, and where not exposed, expose the pulp quickly with the aid of a sharp fissure bur. Wash out cavity with absolute alcohol (less irritant than formalin, etc.) Apply again cocaine-adrenalin; put a piece of unvulcanized rubber and under slowly increasing pressure impregnate the whole pulp. Open pulp chamber widely and extirpate immediately. Wash out canals with thirty per cent. $H^2 O^2$, followed by absolute alcohol and dry with hot air. Except in very few cases I fill canals immediately as follows:

Immediate Root Filling.

Wash out canals with cotton twisted around a Miller's needle, dipped first in a saturate solution of thymol in oil of cinnamon; fill with G.P. points dipped in the same solution. The oil of cinnamon being evaporated after some time, leaves the thymol in small crystals along the wall of the root canal and with the G.P. points form in this way a very long lasting antiseptic. Where necessary (mesial root lower molar, etc.) I enlarge the canals with the aid of Beutebrock's instrument, preferring the hand burs. I have followed this way of treatment daily and thus far have had no bad after effects. At the December meeting of the National Dental Association I gave a lecture on direct pulp extirpation with cocaine-adrenalin, followed by a demonstration. Many dentists are now practicing this mode of extirpation, all being very much pleased with the success.

Experiments with Pressure Anaesthesia.

By Dr. H. E. SANDERS, Erin, Tenn.

The following is the history of a few cases in which I have used the pressure method of pulp extirpation as set forth in the October number, 1903, of *ITEMS OF INTEREST* by Dr. Clyde Davis. I commenced using the other pressure method several years ago and have used it to some extent, and with varying success up to the time I adopted the adrenalin and cocaine method which was about one month ago.

Case I. Lady about forty years old. Superior left lateral, disto-approximal cavity. Pulp not entirely exposed. Applied adrenalin and cocaine with pressure by un-

EXCLUSIVE CONTRIBUTIONS

vulcanized rubber for about a minute. Cut in and applied again for about same time and removed pulp painlessly with not a drop of blood. Another case a day or so afterward was attended with so much pain that I desisted and applied arsenic, but I am now convinced that the trouble was in my not knowing how long to maintain the pressure. I only held it one minute whereas I believe, if I had held it three minutes, as the editorial in the November issue of *ITEMS OF INTEREST* directs, it would have worked as well as my other cases.

Case II. Girl about sixteen years old. Superior right central very large root. Pulp exposed. Applied cocaine and adrenalin for about one minute with pressure as before, and removed with very little pain and some hemorrhage, which I stopped by means of cotton saturated in adrenalin and inserted in root. Had I applied pressure long enough I am convinced that there would have been absolutely no pain and no bleeding to amount to anything.

Case III. Lady about twenty-five years old. Superior right central. Applied cocaine and adrenalin for three minutes to cavity (pulp was not exposed). Cut down and removed painlessly and almost bloodlessly.

Case IV. Same person as above. Superior left central. Pulp not quite exposed. Applied for three minutes; cut down and applied for three minutes more and remove painlessly and almost bloodlessly.

Case V. Same person as above. Pulp not quite exposed in superior right lateral. Applied for three minutes; cut down and applied for three minutes more; cut down again and applied a third time for three minutes, when I removed absolutely without any pain and very little bleeding.

Case VI. Man about thirty-five, fireman on passenger train, came to my office at night suffering from the most violent toothache I have ever seen, in a lower right third molar. He had put something in to stop the pain and in pressing it in had pressed part of the thin bottom of the cavity into the pulp. I removed this softened dentine, applied cocaine and adrenalin with pressure for three minutes and removed pulp without pain.

Case VII. Negro boy about twenty-years old; superior right first molar; applied for three minutes to cavity. Pulp was not quite exposed. Removed it without pain and no bleeding.

In all these cases, except VI. and VII. the roots were filled imme-





ITEMS OF INTEREST

diately and the teeth filled with gold. The others were left because of a lack of time to finish the operation. In none of them was there any soreness to amount to anything. What little was present in one case was relieved by an application of T. Aconite and T. Iodine equal parts. In case VI., I know of nothing that would have given this man immediate relief except possibly extraction, or perhaps morphine might have relieved him in the course of an hour. He was suffering intensely, muscles were twitching and great beads of perspiration rolling off his face; yet in four minutes from the time he entered my office he was perfectly easy.

I shall always be grateful to the gentleman who has given us this method.

Prison Dentistry.

By Dr. V. R. WESTERVELT, Albany, N. Y.

The following statistics, relating to the dental condition of the inmates of the five great penal institutions of the State of New York, will no doubt be of some interest to the profession. The 5,000 inmates of these institutions are under the direct supervision of a corps of experienced physicians and nurses, great attention being paid to sanitation, diet, etc., and yet little or no attention is given or provision made for the proper care and treatment of the teeth of the inmates. Less than 9 per cent of the inmates have ever been subjected to dental treatment previous to their incarceration and consequently the teeth of the majority of the convicts are in need of the dentist's care at that period. The average term of imprisonment is about seven years, and during that time the teeth are sadly neglected unless the prisoner can afford to have a dentist come to the prison, which is seldom the case as up to the present time only 4 per cent of the inmates have been under dental treatment. It seems to have always been the policy of the State to regard dental work done for its wards as a luxury, but we know this idea is not well founded as the teeth must be in good condition to assist digestion, and a perfect digestion is necessary to insure a good physical condition, which often contributes to a good moral condition. One of the prison physicians writes me that in his institution alone there are 350 inmates in urgent need of proper dental treatment and who cannot afford to pay for the services of a dentist. The State should make some provision to remedy this condition by appointing one or more capable dental surgeons to look after the teeth (and their diseases) of the inmates of its institutions and providing for a suitable compensation for the same.

A Simple Method for Getting a Perfect Matrix.

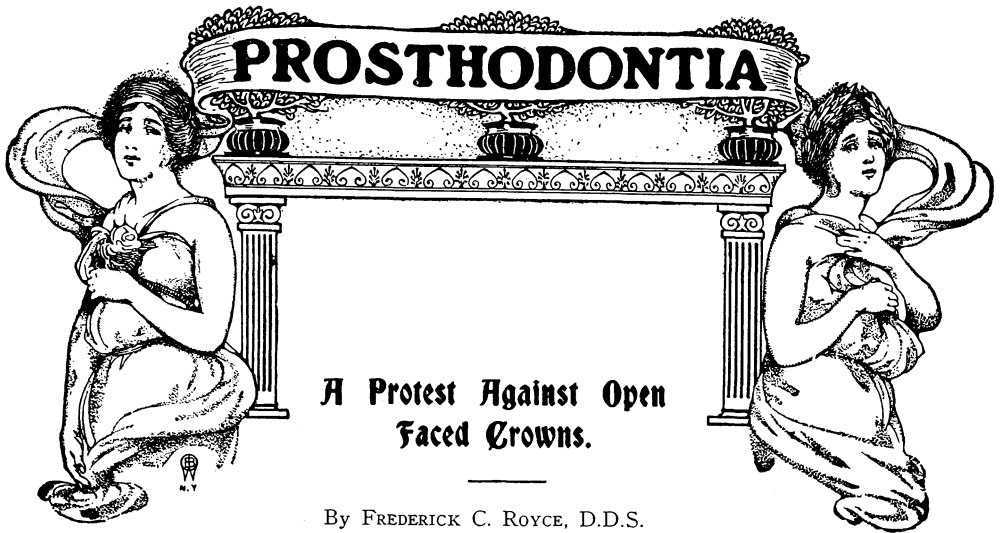
By W. HOLLOWAY, D.D.S., Philadelphia, Pa.

To get a perfect matrix for a porcelain inlay by the use of the materials (spunk and chamois disks) recommended by the Jenkins system or by the use of burnishers or both combined, I have found tedious, with a loss of much time and often uncertain, if not failures. Believing that a better method could be found, I began experimenting with different materials and now believe that I have found one with which a perfect matrix can be easily and quickly obtained, provided of course, that the cavity is properly prepared. After preparing the cavity in the usual way, preferably with the rubber dam in place, cut the gold of usual size and shape, place it over the cavity and with the finger gently press it to conform to the tooth and show an outline of the cavity. Next take a strip of thin dam (usually about five-eighths by two inches in size) and place it so as to entirely cover the gold, drawing it just sufficiently to hold the gold in place. Everything is now ready for the material which I have found so efficient and which is ordinary putty, such as glaziers use. Take a quantity that would about twice fill the cavity, roll it between the thumb and finger into a ball; then place it on the dam directly over the cavity and press with the thumb or finger, gently at first, then firmly, or push it with the dam and gold before it into the cavity.

As pressure is released the rubber withdraws the putty from the cavity and both can be thrown aside. If this plan is carefully followed, the operator will now find that the gold conforms perfectly with the outlines and walls of the cavity and the matrix is ready for removal from the tooth. The putty should be stiff and when the thumb or finger cannot be conveniently used to press it into the matrix, a cement spatula may be used. Putty, if kept in an air-tight jar, will not harden and a few cents worth will be sufficient for the work of several mouths.

I have never tried this method with platinum foil, but believe that it would be no less serviceable than when gold is used.





Read before the Second District Dental Society, November, 1903.

In the construction of a bridge where one of the anterior teeth is to be used as a support, we are confronted with the question, "What kind of a crown shall be used?" There are two important points to be considered, namely, usefulness and appearance; as we not only want a crown that looks well in the mouth but one that is also serviceable. We all dislike very much to see gold crowns on any of the anterior teeth, as they are anything but æsthetic in appearance, and, of course, would not use one, at least not for our lady patients. In the mouth of a man who has a moustache the all gold crown might be used and not be very noticeable.

**Failure of Open
Faced Crowns.**

There are many who object to the removal of the pulp to make use of a Richmond crown for an abutment and not being willing to use an all gold crown resort to the open face crown. Many dentists who are skilful mechanics make use of this style of crown, still I have no doubt that we all have seen cases where the use of them has resulted in failures. It is claimed by those who use this method of crowning that if a perfect adaptation of the gold to the shape of the tooth is obtained and the edges are thoroughly burnished down that the cement will not wash out. Theories may be advanced and new methods introduced for which much is claimed, but clinical experience is the only true test. From my experience I am firmly convinced that it is not possible to make an open faced crown, the cement of which will not be acted upon in the course of time by the fluids of the mouth.

PROSTHODONTIA

In the preparation of a tooth to receive a crown it must be ground sufficiently to allow the band to slip over the tooth in order to fit at the neck. This will of necessity give a large surface that will be much more rapidly acted upon by decay.

After the cement is gone, sooner or later decay will begin under the gold, and it works so insidiously that suddenly the patient awakens to the fact that there is trouble with the tooth thus crowned. Upon examination it will be found that decay has begun and it is necessary to remove the crown. Perhaps at the end of the bridge is a full gold crown which it is necessary to slit open and pry off before the piece can be removed, and then what a sorry sight is presented. The tooth under the full gold crown is probably in as good condition as when crowned, while decay has taken place under the open faced crown until possibly the pulp is nearly or quite exposed. Not only that, but as a rule the dentine in such conditions is so very sensitive that it is almost impossible to work on it, even after having used obtundents. Now what shall be done with such a case as this? Perhaps it is decided to devitalize the pulp and use a Richmond crown, but upon a closer examination it is found that decay has extended above the gum margin either on the labial or lingual surface.

This may seem like an exaggerated story, but it is simply a statement of what has taken place in many months where this method of crowning has been used. Had the pulp been devitalized in the first place the bridge might have been anchored with a Richmond crown and the root prepared in just the shape the operator desired and the result have been a permanent piece of work. With the surface of decay extending up under the gum margin it is far more difficult to prepare the root and adjust the band to make an æsthetic as well as a lasting piece of work.

I have given open faced crowns a fair test, making them over metal dies, using 22k. gold, annealing well and burnishing the edges as close to the tooth as possible. The result with me was always the same; as a permanent piece of work it was a failure and in every case the bridge had to be removed and an anchorage made in some other way.

I have been called upon to remove bridges where the trouble was solely with open faced crowns, the anchorage at the other end being a full gold crown always found in perfect condition.

The workmanship in all the cases as far as I could see was good and satisfied me that they had come from the hands of good operators.

Now why are all these failures? It can not be that it is the fault of the operators in all these cases, as their other styles of crowns were doing splendid service and the failure was always with the open faced crowns. There is only one conclusion that can be drawn in the matter and that is, the method is at fault.

A Hygienic Bridge for the Lower Jaw.

By Dr. H. BRANDT, Brooklyn, N. Y.

Read before the Second District Dental Society, November, 1903.

It would be presumptuous on my part to appear before a body of practitioners of your class intending to teach you anything; on the contrary, it is my privilege to present to your earnest criticism a piece of bridge work for the lower jaw and a method of constructing it.

For the want of a better term, I called it the hygienic bridge because hygiene is the principal feature of this bridge (as far as bridges go). It is an all metal arch with properly shaped cusps; the abutments are the pillars of the arch, thereby leaving an open self-cleansing space under the

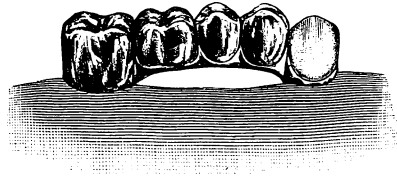


Fig. 1.

bridge. Not all are alike fortunate to have constitutions to withstand the ravages of decay of teeth, nor have all the intelligence to take proper care of their teeth; the fact remains that many teeth are lost and we are called upon to remedy existing evils. The patients, of course, have an idea of what they want irrespective of existing conditions, but it is the duty of the dentist to know and advise the best way to restore a given mouth to comfort and usefulness, not forgetting the esthetic side.

Suppose a case presents where two or three teeth in the bicuspid and molar region of the lower jaw are gone. To restore that side of the mouth a bridge will naturally suggest itself, and what we would expect of that bridge is durability, perfect occlusion and sufficient fulness to sustain the contour of the lower part of the cheek. We would not mind so much the show of gold, as it is unavoidable, unless saddle-back teeth are used, but we would very much like it to be cleanly. Is it possible? Gravity says no; by gravity everything tends towards that part of the mouth and much of it remains there in mouths most scrupulously cleansed. Besides, you all know that the resorption of the alveolus leaves the lower jaw at times in such shape that it is not very easy to grind in teeth properly. I claim for the hygienic bridge all the advantages and none of the disadvantages of the ordinary bridge.

PROSTHODONTIA

Mode of Construction.

The method of construction is simple. I proceed as usual in preparing the abutment teeth and make the crowns. I make soldered crowns while the patient is in the chair. I take an impression and bite with crown in the mouth, pour a model and articulate; then I find the proper teeth to fill out the space (plain rubber teeth) and wax the teeth together, giving the necessary slant and curvature and chill it well. I then make a mould of these teeth as they are together, in Mellott's moldine, and pour a Mellott's metal die; a piece of thirty-gauge gold of sufficient size for cusps and part of buccal faces of teeth is shaped to die by hammering die into lead block and then placing the gold between the die and lead counter die and lightly bringing down to shape. I trim the piece to fit between the abutments and cut out my arch to suit the case; then adjust occlusion, wax up solidly, invest and solder and when finished properly and cemented in place, it is certainly a cleanly piece of work and cleanliness is akin to godliness. (Fig. 1.)

A Contribution to the History of the Dovetailed Fastening for Attaching Artificial Teeth.

By Dr. E. L. TOWNSEND, Los Angeles, Cal.

In the year 1883 I conceived the idea that a detachable facing could be made and held to the backing by a dovetail extending from the back of the tooth or by a dovetail formed in the tooth and the rib extending from the backing. I got up forms, dies and models, made the backings and put them to practical use in 1883 and 1884. In 1885 I applied for a patent and you will see illustrated here some of the models made at the time of my application for patent showing both the dovetail extension from the porcelain and the dovetail in the porcelain. (Figs. 1 and 2.) The dovetail extending from the back of the tooth was the only one that I could make good enough to give it a practical test and I put in some dozen or more in 1883. Upon the examination of my application for patent, the Hon. Commissioner of Patents cited an English patent granted to James Thom in 1857 and known as "Improvements in the Construction and Mode of Fixing Artificial Teeth." This patent anticipated and antedated by twenty-six years my invention of the dovetail for fastening artificial teeth, and I abandoned the idea of a patent. A paper patent possibly or rather probably could have been obtained for its specific use in crowns and bridges, and having no new or original principal involved, I



ITEMS OF INTEREST

thought the Englishman entitled to all the honors and charged the account up to profit and loss. In 1886 I wrote a paper that was read before the California State Odontological Society, detailing the method of making and extolling the supposed advantages of this style of attachment. The models used in illustrating this paper were deposited in the museum of

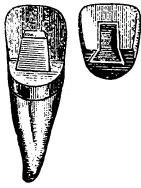


Fig. 1.

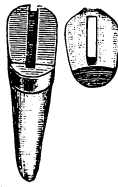


Fig. 2.

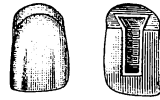


Fig. 3.

the dental department of the California State University and are still there.

This Society ceased to exist shortly after the paper was read and it was never published. I also wrote to Claudius Ash & Sons, of London, asking if they knew anything about these teeth, and they kindly sent me some samples (Fig. 3), which they stated were made in 1857. A comparison of these teeth with the product of the present day is not

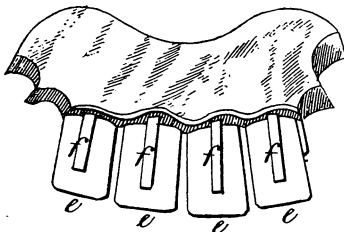


Fig. 4

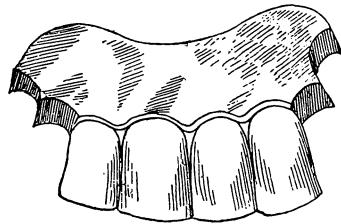


Fig 5

to the disadvantage of the earlier production, for shape, texture and color they stand unsurpassed. I have always had a suspicion that the holders of the patents on dovetail fastenings for artificial teeth knew of this English patent and these English teeth; surely their source of information must have been the same as mine, viz.: the Patent Office. Figs. 4 and 5 are copies from illustrations in the English patent.



The Inter-Vulcanizer Expansion of Plaster of Paris.

By STEWART J. SPENCE, Chattanooga, Tenn.

It is very touching to see the fidelity with which human nature clings to its decadent beliefs. There has always seemed to me something poetically sad in the decay of the worship of Isis. Though this fair Egyptian goddess, who had reigned over the faith of the Nile valley for so many centuries, was only a myth, and the Christus God of the Rome of that age in which she passed away was a real person and vastly more worthy of worship, yet the dying out of the old faith had a tinge of the sadly beautiful about it, and one cannot help sympathizing to some extent with those faithful ones of Isis who still clung to her shrines when all others were forsaking them. No doubt they thought the Christians were bad men, and they were ill-disposed to believe the evil things they said of their goddess.

I have said so many things against plaster of Paris during the last two years that I fear I am looked upon as a false accuser. Men are loath to believe evil of the love of their youth, and are prone to cling to her even when half convinced that she is as false and fickle as she is fair. One cannot help feeling some sympathy with this blind devotion.

Instead, however, of retracting any charge that I have made against plaster of Paris, I am in the field to further sustain one previously made. I refer to the statement that a plaster of Paris model expands during wet vulcanization. This charge I made in the ITEMS OF INTEREST of October, 1902, where I related how that some casts which had been made in an impression tray were subjected to the vulcanizer for the usual time and temperature, some being of plaster of Paris and some of Spence's plaster, and that the former came out greatly expanded; the latter, not at all so. This one of my various charges against plaster of Paris seems to have met more incredulity than any of the others. Indeed, I must confess that I myself have been somewhat troubled by doubt on this point; not as to the fact that casts when placed *loose* in the vulcanizer will expand, for of this I had received so much demonstration that it was beyond doubt, but that the expansion obtains to as great an extent, or nearly so, when said casts are up against tightly squeezed rubber.

In the article above referred to I related how I tested this matter by making two vulcanite plates, each on a plaster of Paris cast which had been run in an upper impression tray, and how I removed these casts from the vulcanized rubber by heating it and thus delivering them without fracture, and how when they were replaced in the tray it was evident at a glance that both had swollen much beyond their previous expansion.



ITEMS OF INTEREST

That the force of the rubber acting against the models did not more thoroughly resist their efforts to expand was that which I could not understand, and though the second experiment verified the first I remained slightly dubious.

I became only the more sceptical when I awoke to the fact that pressure hardens rubber, at least for the time being. This occurred to me later, when seeking the reason why models of plaster of Paris become crushed out of form in flask-closing. Experiments had shown that this plaster does become seriously compressed, and for some time I had to accept this fact without being able to see the *rationale* of it. But this became clear when I reflected that each turn of the screws in flask-closing hardens the rubber by condensing it, and so enables it to return the compliment and compress the plaster.

This consideration made it more difficult to see how the plaster could expand in the vulcanizer when in contact with the rubber. Another consideration which added to this difficulty was, that the rubber becomes harder and harder during vulcanization and thus further resists the effort of the model to swell. But on pondering the problem over it occurred to me that it might be possible that the expansion of the model takes place during the early stage of vulcanization, before the plaster has much softened and while rubber is in an almost melted state of softness from the high heat.

This guess was correct. An experiment demonstrated that all or nearly all the inter-vulcanizer expansion of plaster of Paris occurs by the time the thermometer has reached 320 degrees. A cast was made as usual in an upper impression tray; its crystallization expansion was measured (this being seven folds of No. 20 tin foil between tray and plaster at posterior border of palatal dome, and this is an unusually small expansion, the average being eleven folds of the tin), and then it was heated in the vulcanizer to 320 degrees and immediately allowed to cool. On being taken from the vulcanizer and tried in its tray its expansion was found to have increased to twenty-four folds of the tin.

As this cast had been very little softened by its short bath, it was very nicely adapted for accurately showing this expansion. Casts that have been at 320 degrees for an hour come out so soft that they can be compressed more or less into the tray by the exertion of a little force, and the experimenter is in doubt as to how much he ought to use this force.

The reason, then, why contact with rubber in the flask does not largely prevent the steam expansion of a plaster of Paris model is, that this expansion takes place at a time when the model has not appreciably lost its hardness and when the rubber is very soft from high heat and has not yet begun to harden by vulcanization.



President's Address.

By Dr. MILTON T. WATSON, Detroit, Mich.

Read before the American Society of Orthodontists, December, 1903.

The "annual address" of the presidents of societies devoted to science or art, like funeral orations, had their origin in the remote past, and, unfortunately for you, out of respect for this old custom I purpose to inflict the usual bore upon you even though I may have no more ability to do it well than have some of the men who are called upon to deliver the funeral orations.

This, the third annual meeting of our Society, is another occasion of deep satisfaction to those of the members who were most active in its organization. We think it has been made quite clear to those who have been sufficiently interested to keep at all in touch with our work, that the motives which prompted the organization of this Society were not the result of hasty or immature judgment. As you already know, these motives were the desire for the closer comradeship of those deeply interested in orthodontia, so that the advances in this field might become more widely known and practiced, coupled with the belief that the time was at hand for its establishment as a distinct and exclusive specialty. There is but one other thing that is as essential in bringing about these results, and that is a well-equipped post-graduate school. Whether this school should be connected with some of our great universities or whether the best results will come from private institutions is, of course, an open question, the discussion of which I will not at this time enter into, but

ITEMS OF INTEREST

certain it is that teachings of a radically different nature from those generally in vogue are required before the future acquisitions to the dental profession will have even the faintest comprehension of the science of orthodontia. This is said, not in a spirit of unkind criticism, but merely as an ungarnished statement of the facts. In substantiation of this I may say that prominent college professors and some equally prominent men engaged in private practice, a little less than three years ago, actually ridiculed a man who was about to give up a successful general practice for special work, because they believed it to be a field of such limited possibilities and uncertain results. This belief was but natural, in view of the superficial attention that has been given this work in our colleges.

Orthodontia an Exclusive Specialty. That orthodontia is a work for specialists and not for the general practitioner is, I think becoming a more generally accepted idea even among the men who have been compelled to attempt it and who have, until recently, been satisfied with the result of their efforts. As a man grows in a knowledge which results from a personal experience, that greatest of all schools, he becomes unalterably convinced, if he is a keen observer, that there is no branch of dentistry which more surely belongs in the field of special work. To begin with, it requires a very high order of artistic sense combined with a capacity for skillful and exact manipulation, and equally important with these must be a love for little children, without which no man can become a successful orthodontist.

I think I am not over zealous when I say that no specialty in the whole realm of the healing art requires more of that particular kind of genius which some one has described as "capacity to take infinite pains." The very secret of success in orthodontia is close attention to the minute details. A still further proof that this work belongs in other hands than those of the general practitioner is the sad results with which we come in contact so frequently; and let me impress it upon you that these "insinuations," if you choose to call them such, are not made against the humble and obscure village dentist, but are applied to men who occupy high social, professional and educational positions, and who have among their clientele people of refinement and education who are capable of appreciating really high-class services—in fact, seem not so slow in appreciating them as we have been in directing their ideas along the proper channels.

It is said that "time alone will correct many of the errors of judgment resulting from too hasty deductions;" and while some of you may look upon this address as a rather severe arraignment, it is, as a matter of fact, not intended as such but rather as an attempt to convince you that in your efforts and teachings as applied to this work, you have been and are, in a

ORTHODONTIA

large measure, continuing to make many errors because of a blind adherence to the teachings of the past, which have been very largely the result of hasty and unwise deductions. When orthodontia becomes a thoroughly established and widely practiced successful specialty, its elevating influence upon the profession at large will be such that there will be no further discussion as to the proper time for removing the first molars, nor as to which tooth to extract in order to repair "Nature's blunder" (?) in supplying a child with "large teeth and small jaws." Neither will it be necessary for Cupid to consider the possible evils that may result in the way of malocclusion in future generations should his dart enter the hearts of young men and young women who happen to differ considerably in their physical types.

Influence of the Society.

With an understanding of the early ambitions of this Society, let us glance back a couple of years and see if any really radical changes are noticeable. At the time of the formal organization of the American Society of Orthodontists there were, so far as I am able to learn, but five men devoting their time exclusively to this work. Two of these had been so engaged for a number of years, while the others were comparatively new in the field; indeed, one entered it after the informal meeting at which time it was decided to organize. To-day we find specialists to the number of at least twelve who are devoting their best energies to orthodontia, and at least as many more are putting forth every effort to qualify themselves for special practice in the near future. It is as yet too early to say whether all of these have chosen wisely, but certain it is that many of them have attained success which bears eloquent testimony to this effect.

Three years ago one was compelled to search the periodical literature laboriously to find anything relating to orthodontia, and when he did find it, the chances are many to one that it pertained to such time-honored subjects as extracting or a new complexity of appliances. To-day we have little difficulty in finding literature in the journals upon this subject, and a goodly portion of it is of scientific value. The comments we have received upon the published proceedings of this Society have, from the first, been of a most gratifying nature; and an even stronger evidence of the appreciation of the profession—if such be needed—is the fact that applications for membership are coming to us from nearly every part of the world.

A desire to be perfectly fair and give credit to whom credit is due compels me to say at this point that were it not for the self-sacrifice of Dr. Edward H. Angle and those associated with him in his school the outlook for this Society's accomplishing its desire would indeed be very much darker, for that school, like any other doing a really scientific work



ITEMS OF INTEREST

in the teaching of orthodontia, must become the very fountain head of supply for such a society.

Faulty Dental Education.

The subject of dental education has seemingly been worn threadbare, but among the needed advances and of which you have heard little is a broader study and a keener appreciation of facial art. That this is true no thoughtful man will deny, I think, for the inartistic prosthetic work that one's attention is drawn to in his daily minglings with humanity, is proof convincing. The artistic requirements in orthodontia differ little from those of prosthesis, but in practice the following difference seems to exist, that in the latter field the needs are very largely ignored; while in orthodontia these requirements are given the most careful attention by all properly trained men. In a paper before a Michigan Society some two years ago I ventured the prophecy that the day was not far distant when the study of art would occupy a prominent place in the dental curriculum, and I am to-day more than ever convinced that such teaching would be wise. It is simply preposterous that men should attempt the remodeling of a living human face without at least a fundamental knowledge of facial art, when the men who work on canvas and marble devote to it years of study. Yet how vastly more important it is that the artist working on the human being should possess a knowledge of the lines of beauty than the man who reproduces these lines by means of the brush or the chisel. That many of my hearers will think this utterly impractical I have no doubt—neither do I forget that less than three years ago some of these same hearers doubted the practicability of specialists in orthodontia in any city of less than half a million population. Time works wonderful changes.

Art in Dentistry.

That there is a general awakening to a keener appreciation of esthetic conditions as related to dentistry is shown not only by the time devoted to this phase of it by orthodontists and by at least a few prosthetic dentists—judging from the papers recently presented before the Society whose guests we have just been—but also by the general interest which is manifested throughout the dental world in porcelain inlay work. The interest in this latter work must certainly be due largely to the esthetic considerations and not to the fact that it is so much less fatiguing to the operator or that the successful preservation of carious teeth was not possible by older methods. These things indicate to my mind that we are on the threshold of a brighter, higher era of professional attainment and one which will soon eliminate a number of the distressing methods that have been so largely in vogue in the past and which have mutilated irreparably the masticating apparatus

ORTHODONTIA

of many an individual, as well as having forever destroyed facial lines that might instead have portrayed beauty of face and strength of character. Chief among these "distressing methods" has been the ruthless extraction of teeth, especially the first molars, which many of us removed unhesitatingly during the palmiest days of our ignorance.

The Orthodontist and the Rhinologist. The need for a closer relationship between orthodontists and rhinologists has been discussed in this Society before, and is undoubtedly receiving more

and more attention not only from our standpoint but from that of the rhinologist as well. Some of the most eminent among their number recognize the interdependence of the two and are directing their patients to have done such work as may be required in order to restore a normal size and arrangement within the mouth. They believe that by so doing the patient will have a normal function restored, the effects of which will be far reaching especially in the way of stimulating a normal development in the nasal passages, which carries along with it conditions of the most vital importance to the physical well being of the individual. A rather careful observation in this field convinces me that we will have to modify some of the deductions of the past relative to the association of nasal disturbances and malocclusion of a definite type, namely Class II. Division I. (Angle Classification). Not that these conditions are untrue but rather that the nasal disturbance is also associated with and is apparently a causative factor in many of the cases of malocclusion of Class I. A number of the most pronounced cases of this type have been under my personal observation. That nasal obstruction is always associated with malocclusion belonging to the First Division of Class II. I have no reason to doubt, but to say that it is associated only with this type, I am compelled to believe is an error. I am calling these things to your mind not that I want to elaborate upon them, but in the hope of stimulating you to a closer observation in the future, that we may soon have a vast amount of data at hand from which reliable deductions and conclusions can be drawn.

Physicians who have upon their hands the responsibilities of treating rhinological disturbances have to a great extent overlooked the fact that where oral deformity existed, accompanied by a pronounced inharmony in the relation of the upper and lower lip, that they could not by any possible means restore normal (nasal) respiration until the oral deformity was overcome, so that the patient's lips might close naturally and without the putting forth of a special voluntary effort. The baneful effects of adenoids of long standing, accompanied by pronounced facial deformity, can be only partially overcome by the mere surgical removal of the growth. The disappearance of the eye and ear complications, if they exist, might

ITEMS OF INTEREST

be expected, but the complete restoration of the normal function of the nose can only be looked for when the operation is performed early—before this oral deformity has been brought about. If the removal of the obstruction is delayed until the normal development of the jaw has been interfered with, then the patient will require the services of both rhinologist and orthodontist before the function of the nose can be restored, and until this fact becomes recognized by the medical fraternity at large, they will continue to find many cases where the removal of adenoids will result in very little benefit to their patients.

There seems to exist, in the minds of some physicians, and dentists as well, the thought that the practice of orthodontia is really the art of cosmetics rather than an essential part of the great healing art. That it is a practice which deals in no small way with attempts to restore to normal function and normal appearance parts which in themselves are things of beauty and usefulness really adds greatly to its attractiveness as a life work. However, conservative surgery, which looks to the preservation or restoration of disabled, deformed or diseased parts rather than their removal or complete destruction, has never been denied kinship by the parent profession.

The dependence of the rhinologist upon the orthodontist to aid him in restoring normal respiration in long neglected cases of nasal occlusion; the humiliation suffered by the orally deformed; the possible influence upon the development of the base of the cranial cavity of a high vault and a *straight* septum; and the fact that the practice of orthodontia either obviates or overcomes these conditions places it securely in the field of this great healing art.

Returning to matters pertaining to the Society's welfare, I wish to call your attention to one thing in the management of its affairs which I most heartily commend—the elimination of "politics." This is brought about by conducting our elections by mail, and but one thing is necessary to make this scheme a real success, and that is to place in the hands of each member a complete printed list of our membership with the address of each. I most respectfully recommend that the secretary be instructed to do this.

I should also like to see this Society vote a reasonable sum of money for the purpose of securing a fine collection of models and photographs to be presented to the Army Medical Museum at Washington.

This collection should be strictly modern and should show the result of the correction of oral deformities without the loss of teeth, both from the standpoint of occlusion and of facial art. I see no obstacles in the way of securing such a collection, for it is now possible to have models accur-

ORTHODONTIA

ately duplicated and in this way men could contribute toward such a collection without depleting their own; and, too, the top and the base of all models could then be trimmed to harmonize, thus adding greatly to the beauty of the collection. Should this meet with your approval, I would be glad to see a committee begin work upon it at once and a certain definite sum of money set aside for its use during the year.

Restriction of Membership.

I have but one further recommendation, and that is relative to the class of men who shall be eligible to membership in the Society. I feel that active membership should, in the future, be confined to men who are either teachers or specialists in orthodontia; therefore, without further discussion on my part, I recommend that Section I. Article III. of the Constitution be thus changed, to take effect at the close of this third annual meeting.

Discussion of the President's Address.

I wish to indorse the President's address and all its resolutions, and I am heartily in sympathy with its spirit. I may be over-enthusiastic sometimes in things that relate to orthodontia, but I feel sure that everything he has said is strictly in accordance with the best interests of our specialty. Some of his recommendations may appear radical, yet I believe they are wise and just.

I heartily indorse his recommendation with reference to building up a large collection of models and specimens pertaining to the science of orthodontia, the same to be placed and cared for in our Army Medical Museum at Washington. We must and will have such a collection—one, too, that will reflect great credit upon orthodontia and put to shame all the other branches of dentistry on account of their being so remiss in such matters. Already we have almost everything else represented in our museums, but nothing on orthodontia, notwithstanding that it needs no argument to prove that such a collection would be of inestimable value to dentists and to orthodontists, as well as to mankind generally. Malocclusion is the rule rather than the exception, and we are just beginning to learn how



ITEMS OF INTEREST

greatly we can benefit mankind by proper and scientific attention to the restoration of the teeth to normal occlusion. I have always looked forward to the time, when I am through with my private collection, that it would have a place in our Army Medical Museum, where it might benefit some one and save the innumerable hours of labor, trouble and the great expense in collecting that it has been to me. But now, thanks to modern skill, our choicest models may be duplicated without injury to them, so that instead of there being small collections scattered over the country we may have one magnificent and imposing collection if we will but accept our President's suggestion and take measures to carry it out. My entire collection is at the disposal of the proper committee.

**Restriction of
Membership.**

I also heartily indorse the President's recommendation to limit our members to those who are either teachers or specialists in orthodontia. Of course, this doubtless seems radical to many of you, but it is correct, and for the very best interests of this Society. I am sure of it. Already the Society is growing so rapidly that it threatens to become unwieldy and thus endanger the very object for which it was created, namely, the promotion of the specialization of orthodontia. Of course, some will say we ought to admit all who will come to us and encourage all to do better work in orthodontia. Let me tell you that it is my deliberate conviction after wide experience among dentists, and many years as a teacher of orthodontia to dentists, that it is only the few who concentrate their energies on orthodontia who will ever become truly useful practitioners of this branch, and this Society was created that those who are specially interested might have opportunities in accordance with their deep interests; where they can meet and discuss the finer and grander phases of orthodontia and not be encumbered by those who are superficially interested and whose efforts at best can only be those of amateurs and whose questions and discussions must ever pertain to the kindergarten of orthodontia. We do not want men as members unless they are sufficiently well informed to discuss topics bearing on our specialty intelligently. The usual painful, rambling, superficial discussions on orthodontia so commonly indulged in at dental societies are familiar to you all and ought to be the best of reasons why we should eliminate them from the meetings of this Society if these meetings are to be of any value in the uplifting of this the grandest, the most refining, the most artistic, the most scientific branch of dentistry.

I am asked to define what I mean by a "specialist in orthodontia." I will do so with pleasure. He is not a jack of all trades. He is not a would-be universal genius who would pose as authority on all branches of dentistry, but he is one who is in exact keeping with the term—"specialist

ORTHODONTIA

in orthodontia," or one who limits his professional energies to the study and practice of orthodontia. Such a man knows full well that even this field is ample—nay, more than ample, for his capabilities. By thus concentrating his energy he is enabled to benefit humanity in a way not even dreamed of by the occasional dabbler in orthodontia or would-be "do everything" in dentistry.

As yet the number of specialists in this branch is not large, but it is on the increase and I know of not one who is competent who is not doing remarkably well. You will see some striking evidences of this in the work that will be brought before this Society before this meeting closes, and I here predict that there are those in this audience who will live to see competent specialists fully employed in every city of even twenty thousand inhabitants in this country, for certainly the field is limitless.

It is not necessary that we have a large Society. Already we have far exceeded our expectations in interest and numbers. True growth in orthodontia cannot be rapid, neither can a real interest in it exceed real study and real experience. The most vital interests of this Society demand that we shall not have a great Society as measured by numbers, but that it shall be great in interest, in enthusiasm, and in concentration of study, and you men who are careful observers know that this class of men are not and probably never will be numerous. This Society welcomes all who are truly interested in orthodontia, but we do not welcome that class of men that is ever ready to join all societies that promise to be popular; neither do we want that blighting barnacle, the political dentist. So far we have been spared, and the results of his absence in the prosperity of this Society are well-known to you all. There will not be the least difficulty in maintaining a membership fully in keeping with the demands and growth of this science. Let us admit only those who will be a help in the uplifting of our immortal specialty, and then we shall have no fears as to the success of our annual meetings nor of the quality of work done at these meetings. The subjects that we as orthodontists are most interested in can be of little interest to the superficial student of orthodontia—the dentist. He cannot possibly discuss our papers intelligently. Then why should we wish him as a member? He will always be perfectly welcome to attend our meetings, but he is not an orthodontist any more than he is a rhinologist or an ophthalmologist or an otologist. The day has forever passed when the orthodontist and the dentist shall be the same. Orthodontia has grown too great, and so has dentistry. Let us each specialize, as we should. Let each organize, as he should. Let us no longer be jacks of all trades and masters of none, but true specialists and students of our specialties.



ITEMS OF INTEREST

**Dr. H. S. Hoff,
Ann Arbor, Mich.**

Your President has opened up a great many questions for discussion, and if I should speak upon all the points I fear I should be occupying more than my share of time. The doctor has said many things that we, as general practitioners, do not appreciate, but I am convinced that he means what he says because I know him to be an earnest worker and firm in his beliefs. His idea in regard to establishing a national exhibit at Washington is a very good one, and if you will allow me a suggestion, I would say to go a step further and prepare another set of models for exhibition at the World's Fair in St. Louis. I think that would be a splendid opportunity for the orthodontists to show the world at large what they are doing, and I am certain that the majority of professional men in this country are not cognizant of what is being done in orthodontia by a mere handful of specialists in the branch. Orthodontia is a science by itself, a new branch of our profession, and it seems to me that this would be the proper time to show what progress has been made in a comparatively few years. I do not know of any way in which that could be done more effectively than to prepare an exhibit for the World's Fair. If you should so desire that collection could afterwards be placed in the Medical Museum in Washington, but so far as I am concerned personally I feel that such a collection should be placed where it would do the most good, and that is in the teaching institutions of this country. It might not be feasible to donate to each dental college in this country such a collection, but if it could be placed at some point where it would be accessible to all the colleges, I am sure good use would be made of the collection, more so than if the collection were placed in Washington, where but few people would see it.

Dr. Watson also touched upon a matter that has appealed to me for a long time, one which I hope will be discussed fully, and that is the individual qualities or requirements that are essential to make one successful in this specialty. In my judgment there are very few dentists who have the peculiar temperament that is necessary, that absolute control of themselves which brings with it success. Your President said, and truly, that it requires close attention to details. He also said that it required a love for children. I do not think that that is quite so necessary, although that is a very happy faculty to possess. I believe that the man who engages in this work must have not only technic ability and love for details, but he must have a strong character and individuality such as will keep him loyal and faithful to his work; that will enable him to carry out his plans in the most expeditious and successful manner. One of the great drawbacks in this work is the length of time that is required for a successful

ORTHODONTIA

treatment of most cases that come to the orthodontist. Patients get worn out physically and become disgusted with the work, often giving it up completely. So that it is essential that a man have right ideas in the beginning as to what is wrong, what is to be done, and how it should be done. Take hold with the determination of doing it in the shortest period of time and to the best of your ability, always keeping in mind the comfort and interests of your patients. That, it seems to me, is the particular element of character that is absolutely necessary in one who engages in this specialty. Some people do not know when a thing is completed. They simply go along until they reach a point where they feel that the work is good enough and then drop it. We have all seen many exhibitions of that kind of work in all branches of dentistry and appreciate the need for something better.

Dr. H. E. Webster, I was very much interested in the paper, especially that part which referred to the keeping of models in the museum. I agree with Dr. Hoff that it would be very desirable to have a museum of that

kind in every college, but it would be worthless without well kept records. I have taken some pains to try to keep a record of our school work for that purpose. It would be better to have the best specimens of work done kept in one place, where they might be held as a record for all time. Colleges may be destroyed by fire or pass out of existence, and in that way these specimens would be lost; while if placed in a national museum they would be preserved. Yet it is very desirable to have them in the colleges. In our school we keep accurate records of the class work, and we can refer at any time to anything done in the institution in orthodontia.

Another point brought out by Dr. Hoff was the necessity of exactness in work. Any person possessed of the natural instinct of looking after details will succeed in orthodontia. I have not seen many students possessed of those characteristics. They often do like the patients—become enthusiastic up to a certain point and then flatten out. Very few men have the courage and perseverance to carry the work on to a successful issue. Then we must also consider the patient. Patients differ in their tenacity of purpose and a man who has not the ability to control his patients should not undertake orthodontia at all.

It certainly is a pleasure to meet with this body
Dr. Geo. F. Wilson, because this is a new era in dentistry; it has to do especially with the esthetic side of dentistry. The president has made some very important recommendations and suggestions, but there seemed to be a spirit in the paper that

this organization should withdraw from the profession as a whole. That would be a great mistake, because this organization is a missionary, in a





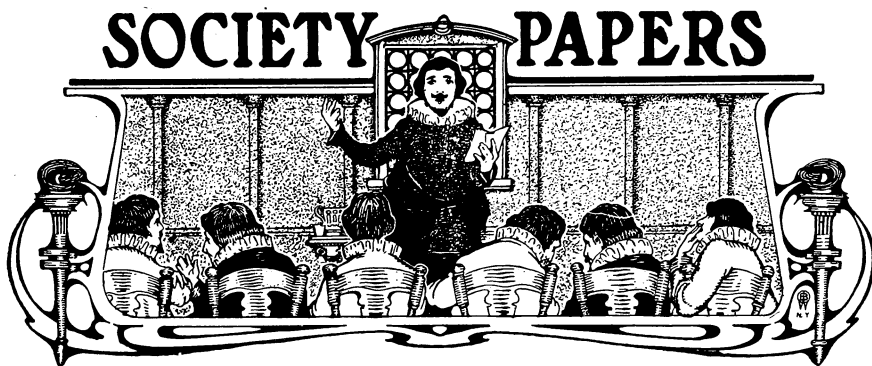
ITEMS OF INTEREST

sense, with a great work to do for the profession as well as the public. The profession at large has much to learn that this organization can impart. Take, for instance, the extraction of teeth. Nobody is better prepared to impress upon the profession the many injuries that accrue from the unnecessary extraction of teeth. So you have another object to keep in mind other than the gathering together of men who are especially or solely interested in this specialty. Of course, there can be no question but that the active members of this Society should be especially interested in orthodontia, but you should use your influence to draw in the others; you should educate not only yourselves but also the mass of the profession.

Although I am not a member of this Society, yet I trust I will be before the end of the session. I never expect to practice orthodontia, but nevertheless I am interested in the work of this Association because I feel that it is a man's duty to take up a special line of work and confine himself to it. I have a scientific interest in this work because I am a teacher, and I expect to profit very much from the work of this Society. I am very thankful to you for the privilege of discussing the paper.

I was very much pleased with the address. There
Dr. Hawley, is not a recommendation in it that we cannot indorse
Columbus, O. fully. I have been interested in orthodontia for many
years, and it is a source of great pleasure to me to see
the rapid strides that this specialty is making toward perfection. The
work of this Society will have an important bearing on all departments
of dentistry; perhaps more than we imagine at this time, and the principles
that will be promulgated in this work will be lasting.





The Dental Curriculum.

By GEORGE EDWIN HUNT, M.D., D.D.S., Indianapolis, Ind.

Read before the Institute of Dental Pedagogics, December, 1903.

When the Chairman of your Executive Committee requested me to write a paper on this subject, he informed me that the late William C. Barrett was to have been our essayist. In appearing before you as a substitute for that masterful, vigorous personality I feel that no apology is necessary beyond the simple statement that I knew him, and knew him well. Nothing but my high regard for this body and my sincere belief that your kind indulgence would cover my shortcomings with the mantle of charity, could have induced me to assume a position where comparison is so obviously to my disadvantage.

The Four Year Course.

Prior to taking up the subject matter of my paper it may be well for me to clearly define my views regarding the four year course in order that you may have my view-point. When the resolution for the four year course came up for passage, I voted "aye" in the sincere belief that it was a desirable advance calling for the support of all interested in striving for the highest educational ideals. I am frank to say that my position was taken without mature reflection and I have no excuse to offer. In the spring of 1903 the question of arrangement of a four year curriculum demanded my serious attention, and a few weeks consideration of the matter convinced me that the added year is a mistake. The intervening months have but confirmed me in that opinion. I am well aware that opposition to the four year course will meet with the condemnation of many in the profession, and I only ask those who do not indorse my con-

ITEMS OF INTEREST

clusion to let my past record on educational legislation be the warrant for my honesty of purpose in this argument.

The all important question in considering the continuance of a four year course is naturally, do we need the extra year? To that query I unhesitatingly reply, No! If this contention cannot be sustained, the whole fabric of opposition falls to the ground. If it can be sustained, we have made an error which should be rectified.

Under the three year course, the majority of our colleges offered exclusive of holidays and examination weeks, seventy-eight weeks of actual didactic and laboratory instruction and one hundred and four weeks of infirmary work. The hours of work were not unusually long, nor was the work unusually hard. Public school pupils spend as much time each day for *nine* months in each year, at their educational tasks. No one can successfully contend that dental students were overworked. On the contrary, the brighter, more apt members of each class were capable of vastly more intellectual effort than was necessary to keep pace with the teaching. But granting, for the sake of argument, that more time was really needed to properly present some portions of the subjects taught, a month added to the session would have added twelve weeks of teaching time and a three year course of nine months would have given us one hundred and five weeks of actual teaching as compared with the same number of weeks in the four year course of seven month sessions.

Memo. seven-twelfths of 52 equals 30, plus. Minus two weeks of holidays and two weeks for mid-term and final examinations leaves 26 +. Multiplied by 3 (years) equals 78 weeks.

Seven-twelfths of 52 equals 30, plus. Minus four weeks leaves 26 +. Multiplied by 4 (years) equals 104 + weeks.

Nine-twelfths of 52 equals 39. Minus four weeks leaves 35. Multiplied by 3 (years) equals 105 weeks.

Whether more than three years, of seven months each, is needed is a debatable question and one that I do not care to entertain in this paper. For my purpose it is sufficient to show that the actual teaching time of a four year course of seven months each is barely that of a three year course of nine months each and thus dispose of the argument that more time for teaching was a factor worthy of consideration in influencing our action. It has been and will be argued that the Southern schools do not want an eight or nine month's course. The obvious answer to that lies in the fact that some of our dental schools already had nine month sessions and there is no rule prohibiting others from extending their sessions to nine months if they find seven months insufficient.

With the "time for teaching" argument settled, consideration may be given to the only other argument of which I have knowledge, namely that

more time is needed for the perfection of the practical knowledge and manipulative ability of the student. In at least one school, also an earnest advocate of the four year course, none but senior students are allowed in the infirmary. As the school is a large one this course is no doubt made necessary by the limit to the clinical material presenting. But if that is true under the three year course it will be no less true under the four year course, so how will their students be benefited? Or is it anticipated that the four year course will cut down the number of students until the junior and senior classes combined are only equal to the present senior class and thus provide practical work for two classes? Very few schools have clinical material and equipment to accommodate another class as large as the present junior and senior classes, and how is the student to secure more practical instruction under the four year course if the facilities are not to be had? Equipment can be bought and infirmaries might be enlarged, but increasing the clinic one-third is likely to prove a serious problem. It would seem that this feature has already received some attention from college men for the curricula so far arranged for the four year course, all provide for the student commencing infirmary work not earlier than the latter part of the sophomore year. This would only give some two or three months more time for practical work than is now offered.

Dentistry is a progressive science and no one desirous of attaining and retaining a position in the van ever ceases to be a student. No student perfects his practical knowledge in the college. There is a period in each man's career when he reaches the zenith of his manipulative skill and ability, but it is useless to think of keeping students in college until that time arrives, for it is the result of years of practice only. In considering the time necessary for the education of students in practical operative and prosthetic dentistry, we can only expect them to achieve a degree of skill that will enable them to perform the ordinary duties of a practitioner with credit to themselves and with benefit to their clientele. No college graduates dentists "full panoplied" like Minerva sprang from the brow of Jove. It cannot be done in twice three years. Much of any practitioner's best instruction must come from the good school of personal experience. This has always been and will always be. And if you grant this to be true, the question resolves itself into the amount of time necessary to bring the student to the degree of skill described. In my judgment twenty-four months, being two winters of seven months each, and the ten months of all day intersession practice offered by the best schools, affords ample opportunity for any student that will ever become a good workman, to acquire the skill necessary to perform all ordinary operations in a creditable manner. This has been my experience and this is my belief.

ITEMS OF INTEREST

Dental Education Compared with Other Professions.

Let us suppose that in August, 1893, a young man recently graduated from college with the degree of A.B. having three thousand dollars to spend on either professional education or for investment in a business, decides on the former and begins a study of the situation. He finds on consulting catalogues and professional men, the following to be a frank statement of the facts. He can study law in the better schools of the United States for three sessions of from seven to nine months each and be admitted to practice. His degree will not reduce the time necessary for graduation. It will cost him from \$50 to \$100 per year for tuition and there are practically no other school expenses. In looking over the field he finds the best lawyers in his community prominent members of society. They take high rank in political and civil life. A score of specialties in practice afford opportunities for special fitness to evidence itself, with, perhaps, the judiciary as an ultimate aim. He notes that the best lawyers are liberally remunerated, their fees are large and they accumulate wealth.

Turning to the medical profession he finds his degree will admit him to the sophomore year of a four year course, the college making him this time allowance for knowledge previously acquired. It will therefore be necessary for him to attend only three years of from six to nine months at a tuition expense of from \$50 to \$100 per year. The other college expenses are merely nominal. When graduated he would have a choice of a dozen different specialties as a life work. Observation teaches him that the best physician in his community are prominent among their fellowmen, that they have large yearly incomes and frequently accumulate some wealth.

And then he investigates dentistry. He first discovers that dental colleges will give him no time credit for work done in other institutions and his liberal arts degree is of no value to him on that score. He will not only be required to enter the freshman class but had he come within one month's time of being graduated from the best medical school in the country, he must still enter the freshman class in a dental school and attend four sessions of not less than seven months each. His tuition will vary from \$100 to \$150 per year according to the school selected. His bill for instruments will be from \$30 to \$75 per year more. At the end of four years, if graduated and passed by his State Board, he will be permitted to practice one specialty and only one. The lawyer may elect criminal law, insurance law, real estate law, railroad law or banking law as his specialty; the physician may choose general surgery, abdominal surgery, the eye and ear, the nose and throat, obstetrics, gynecology, the digestive tract, nervous diseases, or diseases of the genito-urinary tract as his spe-

cialty, but the dental graduate must practice dentistry. Just dentistry.* At best his field is practically "bounded by the lips in front, the pharynx behind and by the cheeks laterally." Our prospective student, in his observation of the community finds that the best dentists are seldom known outside of their clientele and their life work and the practice of their profession does not bring them prominently before the community as does that of the lawyer, and, to a lesser degree, the physician. He finds that the best of them do not attain yearly incomes corresponding to those of the leading lawyers and physicians and that few of them accumulate a competency.

What is the remedy? Either to return to a three year course of seven, eight or nine months, or adopt some laws that will permit students with previously acquired knowledge or more than average ability to complete the course in three years, if they are capable. The dental colleges have made a serious mistake and one that will affect first themselves and next the profession at large. No college man would object to small classes for the next few years if the extra time were needed and better men were presenting themselves for instruction. Better men will only come to us by raising the entrance requirements and offering inducements not offered by schools of law and medicine. This can be done without impairing the quality or quantity of the instruction given. The colleges cheerfully made the various steps in advance advocated by those interested in dental educational affairs because it was readily seen that they were needed and were for the benefit of the profession. Our present rules will work a positive detriment to the profession in turning from our doors the very men we most desire to attract. If this is true, will we have the courage to undo a mischievous piece of work or will we yield to a fear of condemnation on the part of the unthinking and continue a course sure to result in ill? I leave this to you for your consideration.

In looking over the list of studies applicable to a dental training some will immediately suggest themselves as fundamental or foundation studies and their pursuit should be pushed in the early college life of the student. Other subjects, as operative and prosthetic dentistry, are of such vast importance and require so much detail in their presentation that the best results are obtained by teaching them throughout the entire college career of the student. Still other subjects as bacteriology, orthodontia, pathology and oral surgery, requiring a lesser time for their presentation and preliminary knowledge for their proper understanding, naturally

The College Curriculum.

*Orthodontia? Prosthodontia?—Ed.



ITEMS OF INTEREST

come in the middle or latter part of student life. During the past few years this association has been favored with several reports and papers on curricula and many of the outlined courses shown before us on large sheets of paper have been models of typography and monuments to the patience and industry of their makers, but I cannot see that uniformity among the college courses has resulted therefrom. So in this paper I will not make hard and fast rules regarding the amount of time to be spent on each subject but will take up each in turn and give my reasons for believing it ought to precede, accompany or follow other subjects.

Anatomy. Anatomy should receive attention at once. Two-thirds of the total lecture room anatomy taught is most advantageously presented in the first year, leaving the remaining third for the second year. Early in the first year lectures on the various tissues should be given by the teacher having the dissecting room in charge, preliminary to work on the cadaver. In the dissecting room a convenient division of the cadaver is to call the head and neck one part; from the neck to the diaphragm two parts, one on either side of the median line; and from the diaphragm down two parts, again divided by the median line. Before the holidays each first year student should dissect one part, and after the holidays the other part, excluding the head. In the second year the head should be dissected.

Histology. Histology should be begun at once and completed in the first year. The laboratory work should accompany the lectures. Dental histology belongs in the latter portion of the first year. It should accompany or precede lectures on the preparation of cavities. Physiology, pathology and even therapeutics depend largely on general histology for their elaboration, hence this study should be begun and finished as early as possible.

Physiology. Physiology, another fundamental study, should be crowded during the first year. Two-thirds of that to be presented should be completed during that time, the remaining third to be presented in the second year. Pathology and therapeutics both wait on it.

Chemistry. Chemistry also deserves early attention. The completion of elementary considerations and inorganic chemistry, including analytical work, is desirable in the first year, leaving metallurgy and organic chemistry for the second year. The laboratory should, of course, supplement the lecture room. Special chemistry relating to tooth bleaching and other subjects pertaining directly to dental art may be taught in the third year.

Operative dentistry should be begun at once. **Operative Dentistry.** Lecture room work should consist of the anatomy of the oral cavity and surrounding tissues; general consideration of relations of the parts; the anatomy of the teeth; embryology, general and oral; and the histology of the teeth and closely related parts. This with a few lectures on examination of the mouth, bringing the mouth to a sanitary condition, separation of teeth and the exclusion of moisture, will consume the first year. In the latter part of the year operative technics, supplemented by lectures, may be begun. During the remaining years the course should be progressively developed from the most simple to the most complex problems presenting themselves. The lectures on this subject should be among the last as they should also be among the first delivered to the dental student. How much shall be taught in each year is a matter of opinion, and mine would probably not affect that held by some other teacher.

Prosthetic dentistry should also have its beginning during the first year and its ending with the commencement exercises of the student. The arrangement of the course will naturally depend on the judgment of the teacher, but as a general proposition vulcanite work will come first to be followed by cheoplastics, crown and bridge work, interdental splints, et cetera, with porcelain work as the final offering.

So far this curriculum has been easy, and I have felt fairly well assured that the ice beneath me was inches thick, but from now on I realize that air holes and rough spots yawn and yearn to be my undoing.

In a four-year course, materia medica should be taught in the second and therapeutics in the third year. That proposition is easily defensible. Histology and physiology should be completed before therapeutics is taught, as a correct understanding of the latter is based on the former. Materia medica may be taught, however, during the second year, before physiology is completed. It is desirable that the student have the benefit of his therapeutical education before entering on his last year's infirmary work also. In the three-year course these studies are not so easily placed. It is just as desirable to complete them in the junior year here as it is in the four-year course and for the same reason, but we find physiology as yet uncompleted. Considering the advantages and disadvantages of both propositions, I am inclined to believe that therapeutics should be taught in the junior year of a three-year course and materia medica in the freshman year. Both might be taught in the junior year by doubling the time devoted to them, but the junior year of a three-year course is already the hardest of the three and cannot stand much additional burden.

ITEMS OF INTEREST

Orthodontia. Orthodontia is best taught in the junior year of both the three and four-year course if time will permit of it in the former. It is desirable, if feasible that the student complete this study one year before finishing his dental education that he may put his knowledge in practice. However, in the three-year course so much matter of greater practical importance in the training of the student calls for elaboration during the second year that orthodontia may be a part of the last year's course to perhaps a better advantage.

Bacteriology. Bacteriology lectures and laboratory work should come in the junior year of either course. The laboratory work in histology will have given the student the required familiarity with the microscope and a knowledge of the technic of staining and slide preparation. It is desirable that this study shall precede pathology as the latter is based largely on it.

Dental Physics. Dental physics, including strength and stability of filling materials properly comes in the sophomore year of the four-year course and the junior year of the three-year course. This in order that it may accompany the lectures on filling materials.

Comparative Anatomy. Comparative anatomy should receive attention in the sophomore year of the four-year course and the junior year of the three-year course. This is desirable in order that it may accompany or follow the closing lectures on human anatomy.

Oral Surgery. Oral surgery is a senior study in either course. It *must* be preceded by anatomy and physiology and *should* be preceded by therapeutics and bacteriology.

Medical or physical diagnosis, dental jurisprudence, oral and office hygiene, conduct of practice, and similar "finishing" studies should come in the senior year.

Pathology, lecture and laboratory is a senior study. It requires completion of anatomy, physiology, histology and bacteriology for its best elaboration. And that, I believe, covers most if not all of the branches taught in our colleges.

Some years ago I had the temerity to hope that uniformity in college curricula might be accomplished in so far as to regulate the studies taught in each year, not the amount of time devoted to them, but as the years roll on the conviction is forced in upon me that such a hope is but an iridescent dream. However, to fulfil the obvious wishes of the executive committee a list of studies to be given in the three-year and four-year course is herewith appended:

First or Freshman Year—Physiology, anatomy, histology, chemistry, materia medica, operative dentistry, prosthetic dentistry, chemical laboratory, histological laboratory, operative and prosthetic technics and dissecting.

Second or Junior Year—Physiology, anatomy, comparative anatomy, chemistry, therapeutics, operative dentistry, prosthetic dentistry, bacteriology, dental physics, chemical laboratory, bacteriological laboratory, operative and prosthetic technics, infirmary practice and dissecting.

Third or Senior Year—Operative dentistry, prosthetic dentistry, orthodontia, medical diagnosis, dental history, oral hygiene, dental jurisprudence, oral surgery, pathological laboratory, porcelain technics and infirmary work.

First or Freshman Year—Physiology, anatomy, histology, chemistry, operative dentistry, prosthetic dentistry, chemical laboratory, histological laboratory, operative and prosthetic technics and dissecting.

Second or Sophomore Year—Physiology, anatomy, comparative anatomy, chemistry, operative dentistry, prosthetic dentistry, dental physics, materia medica, operative and prosthetic technic, metallurgical laboratory, chemical laboratory, dissecting and infirmary work during the last half.

Third or Junior Year—Operative dentistry, prosthetic dentistry, therapeutics, orthodontia, bacteriology, operative and prosthetic technics, bacteriological laboratory and infirmary work.

Senior or Fourth Year—Operative dentistry, prosthetic dentistry, oral surgery, pathology, medical diagnosis, dental history, oral hygiene, dental jurisprudence, pathological laboratory and infirmary work.

How Shall Quizzes Be Conducted?

By FANEUIL D. WEISSE, M.D.

Read before the Institute of Dental Pedagogics, December, 1903.

The quiz is a most important factor in the imparting of a professional education, therefore its conduct deserves careful attention to obtain the greatest advantage from it.

Passing questions promiscuously from student to student is of little personal value to the student, and of no permanent value to the professor—especially when the fact of prompting is considered. Stated written

ITEMS OF INTEREST

examinations during the session—mid-term or more frequent—have not the zest and value of the frequently and carefully conducted quiz before the class.

No fixed dates should be scheduled for the quiz; thirty to sixty minutes per week should be devoted to it in each department.

That the quiz should be impressed with its importance the professor should conduct it; not delegate it to his assistant nor to a quiz master.

The objects to be attained from the quiz are:

(1) That the student may give evidence of, and personally realize the progress he is making in acquiring his knowledge;

(2) That the listening class may profit by the questions and answers—taking notes of the same;

(3) That the professor may realize what progress he is making in imparting his subject to his auditors;

(4) That the professor may judge of the individuality of each student as well as of his accumulating knowledge;

(5) The obtaining of a permanent record of the answers of each student so as to be able to economize the work of the progress (written), or final examinations (written or oral) of the session.

The conduct of the quiz presents two standpoints: the examiner and the students to be examined.

(I.) *Conduct of the examiner.*

The first essential is that the examining professor be prepared to give out his questions rapidly—there should be no halt in asking the questions. To accomplish this the examiner should have a written sequential list of subject headings before him to frame his questions by.

(Indeed, a professor's work is not fully systematized until he has drafted a sequential synopsis of the subject heads of his course of lectures—such a synopsis becomes the compass for all his work of lecturing, quizzing and the end of session examinations.)

The second essential is that the examining professor be provided with a list of the class—by which a permanent record of the quizzes is obtained—on a broad sheet, the line of the student's name to bear the record of the dates of his examining and the tallies of his answers at each examination. (Such tally record of the answers at quizzes by the respective students should be given due weight at the progress and the final examinations at the close of the session.)

(II.) *Conduct of the students to be examined.*

Call out ten students indiscriminately and without previous notice; seat them before you with their backs to and apart from the class—to avoid prompting. Read out the name of one of the ten, who, rising in his place, is asked question after question until he fails, when he sits down;

and so one after another is read out, questioned and seated. When the ten have been finished with they return to their seats in the lecture room, and ten more are called out and similarly dealt with.

As each correct answer is given the professor having entered the date of the quiz on the student's line of the tally sheet, it is tallied after the date. As the ten students return to the lecture room seats the number of correct answers of each is given to the class.

An incidental and most valuable method of quizzing to impress important points, which meets with much enthusiasm on the part of the class, is to unexpectedly—upon entering the lecture room or during or before closing the lecture—call for *viva voce* answers to questions, repeating and revising them from day to day until the examiner realizes that the entire class knows them.

The quizzes, by sections of ten as above detailed, call forth the fixed attention of the entire class and the taking of notes.

As the correct answers of each student are given out to the class—many making excellent records—the genuine enthusiasm evinced by facial expression and applause of the class at a good record reminds one of the enthusiasm shown at athletic games.

How Shall Quizzes Be Conducted?

By L. P. BETHEL, D.D.S., M. D., Columbus, O.

Read before the Institute of Dental Pedagogics, December, 1903.

Any one can ask questions, but not every one is a successful quiz-master. To better understand what methods of quizzing are most effective, we should first consider the object of the quiz in class work. The object, as I understand it is:

First—To test the student's knowledge of the subject covered by the teacher.

Second—To make the student review thoroughly the lesson recited or the notes he has taken on a lecture.

Third—That the student may gain additional information regarding any portion of the subject he may have missed, or that he did not fully comprehend when it was presented.

A single examination at the end of a semester or at the completion of a session is not, in the opinion of the writer, a thorough test of a student's knowledge of the subject under consideration.



ITEMS OF INTEREST

Why? Because the student may be able to answer correctly all, or nearly all, the questions asked in examination and yet be deficient in many portions of the branch not touched upon in that examination. Or, he may be unable to answer satisfactorily the majority of questions asked and yet have a better knowledge of the branch in general than some others who may be able to answer creditably these particular questions. But by quizzing students the teacher soon ascertains who is applying himself and who is not. I believe a daily record of the quiz, or recitation, is of more value as an indication of the student knowledge in any particular branch than any written examination.

It is important then to ascertain how the quiz should be conducted to be most effective. But what is implied by the term "most effective?" In answer to this we might suggest the following propositions:

First—To go over thoroughly the subject under consideration.

Second—To bring out any points the student may have missed or those not fully understood nor comprehended when the subject was presented.

Third—To give a fair hearing to the student being quizzed.

Fourth—To hold the attention of all the students during the quiz hour.

Fifth—To make the student keep reviewing the subjects gone over.

Let us see how this may be accomplished:

First—*"To go over thoroughly the subject under consideration."*

A teacher may be conversant with his subject and yet omit important points by quizzing in a miscellaneous manner. The questions should cover thoroughly the subject matter as presented. I believe in preparing for the quiz the same as preparing for a lecture or recitation; and in preparing I have made it a custom to formulate questions covering progressively and thoroughly the subject matter, and requiring the students to write down all questions asked in the quiz. This is for two purposes: One, that no portion of the subject may be overlooked, and the other, to give the student a working formula from which to study in reviewing. The questions following the text as they do, in a progressive order, enables him to find quickly in his text-book the subject matter referred to by the question asked.

This brings us to the consideration of the second proposition, viz.: *"To bring out any points the student may have missed, or those not fully understood nor comprehended when the subject was presented."* If the student does not obtain all these points from the answers during quiz, his having written out the questions, and the questions covering the subject thoroughly, give him a means of ascertaining and studying any portions of the subject about which he may feel uncertain.

Proposition third: "*To give a fair hearing to the student being quizzed.*" A recitation, or quiz, is probably as trying for the student as any requirement he undergoes, and he should not be called up in such a manner as will embarrass him unless it be as a reprimand. He should be given every opportunity possible to show just what he does know or does not know about the subject, and no restrictions should be allowed.

Fourth proposition: "*To hold the attention of all the students during the quiz hour.*" This is difficult to accomplish at all times, and to accomplish it often taxes the teacher's ingenuity. I have made it a custom to never quiz a class in any regular order, but to skip here and there, even recalling some one who has already been quizzed in the same hour if it seems advisable in order to hold closer attention. One must keep the members of a class in a state of expectancy, and my custom has been to ask the question first, then call upon some one to answer. By doing this every one is formulating an answer expecting to be called. If I notice inattention on the part of any particular student, I aim to call upon him. Some times in the midst of a recitation by some one else I will say: "Mr. Blank, you explain this, or explain the rest of this subject to the class." If he has been so inattentive that he did not hear what was recited or lost the connection and asks me to state the question again, I simply mark him zero for inattention and call upon some one else. The next time he is found giving due attention, for he realizes that the quiz markings count for considerable in the final reckoning.

Fifth proposition: "*To keep the student reviewing the subjects gone over.*" The members of my class do not know when they assemble for quiz whether that quiz will be entirely on the last recitation, or lecture, or on some of the work already taken. I may ask them questions from several different subjects gone over before beginning on the topic in hand. Or, instead of a quiz, I may require a written recitation at any time. The written recitation appeals to me as a good drill, and although it entails more work on the part of the teacher I believe it pays to give such tests every few weeks. The students who are becoming indifferent to study I aim to quiz all the harder, and it usually whips them into line. At the end of the quiz, I allow enough time for any questions the students may desire to ask, or to explain to them any points not clearly understood.

While this particular method has proven successful in my hands, I do not believe any one method to be equally effective for all teachers. Each teacher must work out his own. That method by which he can best attain the desired results—for the results are what we want, no matter how it may differ from others—is the method for him to follow.



How Shall Quizzes Be Conducted?

By ROBT. H. NONES, D.D.S., Philadelphia, Pa.

Read before the Institute of Dental Pedagogics, December, 1903.

How shall quizzes be conducted? This is indeed a more important subject to the student body and colleges than is generally accredited to it. Is it not at the quiz that the student seeks for a clearer explanation of subjects? The righting of misunderstandings and misinterpreted meanings? Therefore, I say, it is indeed essential that much thought should be given to the selecting of quiz-masters, number of quizzes per week, hours for quizzing, system of quizzing, etc.

Let us first turn our attention to the system of quizzing from a financial standpoint. Should the schools furnish a free system of quizzing? Should they be regularly listed as fees? Should they be conducted as private or special instructions? Should they be a part of the college curriculum, or should the quizzing depend upon the professor of the chair, devoting a few moments of each lecture hour to quizzing? The answers to these many queries could readily be "Yes" or "No."

The school which furnishes a free quizzing system no doubt offers a greater inducement to the prospective student, but it is a doubtful question whether he receives and gives the general prompt attention as when he has invested a few dollars for private quizzing, unless the institution has a financial standing which would warrant its properly compensating the quiz-masters for the value of their services and time demanded. Institutions so constituted are much in the minority rather than the majority. Then again the receiving of something for nothing is but little appreciated by the human race (the student body being no exception to this failing), therefore the student does not feel in duty bound to attend regularly and promptly; hence much of the quiz-master's efforts are lost. A free quizzing system, at least to some extent, is a necessity, and this I think should be conducted by each professor and lecturer, supplementing the regular quizzes by a few moments of his lecture hour to quizzing on the subject matter previously gone over. This is essential, not alone for the student, but it should also enlighten the incumbents of the different Chairs as to the clear elucidation of their teachings; whether their individual methods are fruitful to the greater number, or but to a few; whether the answers brought out should demand a reconstruction or modification of lectures. It is this personal quizzing by the lecturer which calls his attention to such matters not understood and warranting a repe-

tition of the subject. It is that part, therefore, of a course, which is of priceless value to both teacher and student as it is in many instances the last opportunity given to right wrongs.

Personally I believe that private quizzes, preferably conducted by assistants of the individual chairs or by regular appointees of the Faculty, would be productive of the most good, for the reason that the student would not absent himself and he undoubtedly would give better attention to that for which he pays. The quiz-master having the individual responsibility placed upon him would look to his laurels and the remuneration which should naturally increase with better work would be an incentive to do his utmost.

If the quiz-masters receive a liberal compensation for their efforts the institution could then make a selection from more applicants. Too much stress cannot be laid upon the personnel of the quiz-masters; not enough attention nor sufficient recognition is given them. Their selection should be made carefully with a view of strengthening, not only the individual Chair but the institution as well. The light of the quiz-master should not be prevented from shining, for fear of eclipsing the merit of the senior teacher, the Professor of the Chair. To accomplish the most good and best results one must frequently sacrifice one's feelings longest as the title does not necessarily make the most efficient teacher.

After the selection of a competent quiz-master has been made, his duty should be clearly mapped out for him by the Professor of the Chair, and one of the most important, I believe, is to have him attend each lecture on the subject on which he is to quiz. It is impossible for him to keep in close touch with every thought of the teacher in any other way. Reviewing the lecture notes will not suffice, and by his attending the lectures the students are fully aware that he is well posted, at least on the idiosyncrasies of the professor. It is imperative that the quiz-master be thoroughly qualified; he should command the attention of the student body; frivolity at no time should be allowed to enter into the quiz hour, nor careless nor partial answers be accepted.

The different subjects naturally demand different methods of conducting a quiz, but modifications should not prevent the carrying out of salient points equally valuable to all branches, for example: The individual mind should be constantly kept upon the subject and not allowed to be lax before or after he has answered the question put to him. One way of so doing is that of putting the questions in a regular and systematic manner; questions should not be allowed to pass unanswered too long, for fear of the students losing interest; concise and thorough answers only should be accepted, and all answers and questions should be audibly and plainly given to the entire class, as well as a clear and proper explanation,

ITEMS OF INTEREST

particularly of the incorrect ones. The quiz hour may easily be made a medium for ridiculing those holding incorrect views. This should never be tolerated, as it will be followed by lack of respect as well as embarrassment of the student thus made a mark of. Correct or incorrect marks should be entered against each student, not only as a matter of reference but also as an incentive for him to carefully consider questions before answering. Haphazard methods should absolutely have no place in the quiz room; as previously stated, it is here the last chance for correction of misunderstood theories and methods is met. For this reason alone it should be conducted with the utmost care, I would say even more so than the lectures, for upon whom does more responsibility rest, from whom is more individual teaching expected, or with whom does the student body come in closer contact than the quiz-masters and demonstrators? practically they are the teachers and makers of dentists.

Questions which can be answered negatively or affirmatively should be avoided as much as possible, as it is rare that such answers draw from the student any knowledge of the subject. Questions requiring answers with some degree of explanation give the student an opportunity to explain his thoughts and at the same time do much to prevent guessing on the subject. When a student is asked a question he should arise and answer in an audible tone so that the entire class may hear the answer. This also gives the student training in addressing a gathering as well as preventing laxity and carelessness in answers. This individual training amounts to more for a student than might be supposed; it is oft times not the lack of knowledge, but the result of self-consciousness that prevents a student doing justice to himself or the subject with which he may be thoroughly cognizant.

It might be advisable at times to allow students to take turns in conducting the quiz; this would not only be excellent training, but it would probably bring out questions on a line of thought which would not occur to the professor or quiz-master.

Interest can be obtained and retained by the free use of blackboards, diagrams, models, etc., which the student as well as the quiz-masters should use, and thus frequently be able to make themselves clear, when without the use of the same, answers and explanations may be very vague. It is absolutely requisite that the quiz-master be in thorough accord with the lecturer, as nothing will cause greater lack of discipline, be more destructive of confidence than the differences of opinions or methods between the professor and the quiz-master. This absolute understanding of the teachers is not liable if the quiz-master makes no pretense of attending the lectures on the subject, so I think it may be plainly understood

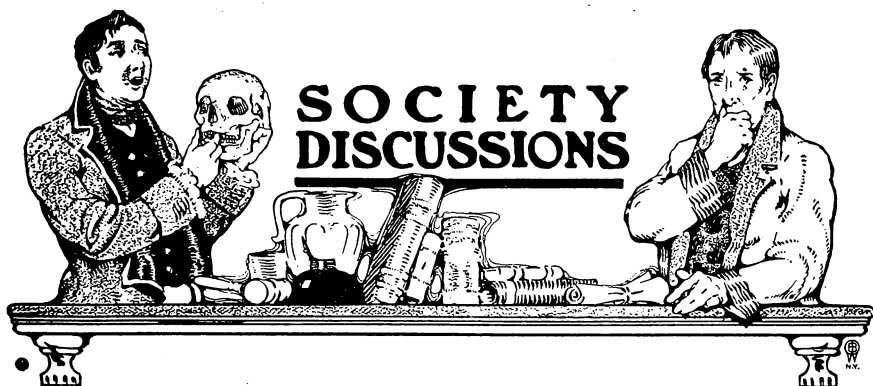


why it is so important for the quiz-master to attend each lecture on the subject on which he is to quiz.

Every subject should be given a regular specified hour each week for a quiz and the time should be selected with a view of deriving the greatest benefit therefrom. I am fearful that it is not infrequent that the quiz hour is crowded into any spare time available, much to the detriment of the subjects reviewed.

The quiz hour should undoubtedly be recognized as part of the regular curriculum and attendance at the same should be required of the students just as much as at the lectures. It is a conceded fact that as a general rule the students acquire more knowledge at one good quiz hour than from many lectures.





Second District Dental Society of the State of New York.

November Meeting.

A regular meeting of the Second District Dental Society of the State of New York was held on Monday evening, November 9, 1903, at the Kings County Medical Library Building, 1313 Bedford avenue, Brooklyn.

The President, Dr. Hamlet, occupied the chair and called the meeting to order.

The Secretary, Dr. Royce, read the minutes of the last meeting, which were approved.

Incidents of Office Practice.—Pulp Mummification.

Dr. Barker. We have with us this evening one of the gentlemen from the New Jersey Society, Dr. Sutphen, who has come with the object of getting some information about pulp mummification. It seems that among the New Jersey men, the practice of pulp mummification has never been taken up, and he was somewhat surprised when I told him quite a large number of our members follow that method, and have done so for four or five years. I should like for his benefit to get the expressions of several gentlemen who are using that method continuously.

Dr. Rippler. Dr. Barker's views are mine entirely on this subject, and if Dr. Sutphen knows Dr. Barker's views, he knows mine. I adopted the treatment as set forth in the ITEMS OF INTEREST about four years ago, and have had great success. I would not do without it. We often hear in meetings the old story of filling roots up to the end with gold, and such things, without a

SOCIETY DISCUSSIONS

failure. I may say I have had perfect success and never had a failure with pulp mummification. I see the patients and have the records, and know all about it. It is not a medicament to take care of putrid conditions in dead teeth at all. It only takes care of the ends of pulps that we cannot get at otherwise. It certainly does it in my practice, and I have not yet seen or heard of a failure. I see the patients I have treated in that way from time to time, and they are all right. If I had to give up any medicament in my office, I would rather give up any other but that.

The President. Dr. Barker some time ago suggested that the gentlemen keep a strict record of such cases, and report to him, and he has recently asked for that report. I have kept such a record, and I reported to him about twenty or thirty cases. I could have given more, but I thought that was sufficient. I have had some failures, but that does not make me discontinue its use.

Dr. Brewster. I would like to ask Dr. Rippier his method of doing that, whether he fills the canal with this material on cotton, or if in filling the root canals he fills also the pulp chamber, and how does he cover the pulp chamber?

Dr. Rippier. The beauty of this treatment is you do not clean out the pulp canals at all. Leave the pulp in the canal, and they become their own canal filler. They become mummified. You simply bur out the pulp chamber. Do not try to clean out with broaches and all that sort of thing, because in some teeth you cannot do it anyhow. In straight-rooted teeth, you can, of course. I have never yet known in four years' practice of a failure with this method. I have heard that a great many people have been using it as a material to take care of putrescence. It is not intended for that purpose, and does not do it. It takes care of healthy pulp tissue that you cannot extract, and you afterwards fill the canals. Merely clean out the pulp chamber; it must be clean and dry and done right. No debris must be left. Use as much care there as though you were trying to fill the canals with gold. You will have no trouble then.

Dr. Brewster. How do you cover the pulp canal?

Dr. Rippier. Cover it with the filling. Put amalgam right over it. Take care not to get too much pressure. In some patients the conditions are different, and it is too highly sensitive to do that, so you must put in a very thin mixture of oxyphosphate for a day or two; afterwards remove it, and then put in your amalgam or gold.

Dr. Schmidt. Your mummifying paste has very little to do with it. It is the arsenic you have used. The pulp is impregnated with the arsenic, and you surely will



ITEMS OF INTEREST

have trouble afterwards. I have used it for several years, and I have not been as successful as the last speaker. I am sorry I have any mummifying paste in teeth where I have used it.

Dr. Ripplier.

You can take all the other materials out of my cabinet, but leave me the mummifying paste.

The President.

In order to understand the way to treat teeth with that paste, you should see a clinic such as Dr. Barker gave some years ago in Newburg. His method of carrying the paste was by means of a pellet of cotton with a slight rotating motion. That pressed the mummifying paste into the minutest canals.

Dr. Ripplier.

I understood Dr. Barker's clinic at that time was merely to show it as a pulp filler. When you use a mummifying paste, you do not use it as a sterilizer or as a root filler.

Dr. Schmidt.

The arsenic you use preserves the pulp. If you open up into some of those teeth, you will find living pulps. Four years is not sufficiently long to prove the efficacy of your practice.

Dr. Ripplier.

Lots of methods and operations brought before this Society have been dead failures in less than two years. This has lasted longer than a great many others I know of—cataphoresis, for instance.

Dr. Provost.

If you use the cotton to force it into the canals, what is to prevent getting air up into those canals, the air forming a space that you do not fill. I used the paste in some cases. The method is to use a small gutta percha cone, carrying the paste and leaving it there. I do not do as Dr. Ripplier does, leave the canals uncleaned. I clean them as thoroughly as if I were to use gold, chloride of zinc, gutta percha dipped in chloroform, or any of those methods. I do not think by using the cotton and pressure you can get that space in the canals entirely filled, nor entirely sterile.

Dr. Barker.

If the paste is as thin as it should be, it seems to me practically impossible to confine air beyond the advancing nerve paste. If I wanted to confine air there, I think I would have a hard time doing it. The paste is such a soft and plastic mass, that it is incapable of retaining air ahead of it. I want to touch upon a point Dr. Ripplier made. He speaks of live remnants of pulp in the canals. As far as I know from the literature of this subject, neither Dr. Soderberg, Dr. Waas or Dr. Houghton, or the gentleman from Syracuse ever advocated putting the mummifying paste upon live pulps or remnants of pulps. I think many of the failures reported have

SOCIETY DISCUSSIONS

arisen from that cause. Any pressure that is exerted upon a remnant of live pulp is going to produce pain and pulpitis and subsequent trouble, although Dr. Rippier's experience is to the contrary.

Dr. Waas in his paper read before the New Jersey State Society at Asbury Park in 1897 or 1898, laid stress upon that point, especially in the discussion which followed. Dr. Luckey asked the question, suppose that the pulp were still alive? Dr. Waas insisted that he did not suppose anything of the kind, because it was a prerequisite that the pulp should be dead, and if it were not, he would kill it, presumably with arsenical paste. As to Dr. Schmidt's argument as to the arsenic acting as a preservative of the pulp, I doubt if it would do that. There are two things in the mummifying paste which I think do that—one is the thymol, which is a strong antiseptic, and the other is the dry or burnt alum. That is a powerful caustic and astringent and tanner; it literally tans that remnant of dead pulp.

I think the vital point in the use of this paste lies in the after result physiologically. The treatment of the pulp causes it to shrink. They are all astringent drugs, and if the pulp shrinks in a pulp canal, the full caliber cannot be filled. If the canal cannot be filled, and it becomes infiltrated with the serum surrounding the end of the root, that will eventually overcome the antiseptic contained in the material in the canal.

Dr. Ferris.

If a pulp has become dead, or partially so, or mummified, or dried up, it has then lost its power of distributing any serum or other fluid into that canal. It is cut off at the apical end from any life-giving or productive power; therefore Dr. Ferris's argument does not hold good, in my estimation.

Dr. Rippier.

Dr. Ferris's argument is purely hypothetical, and not based on practical experience.

Dr. Barker.

My practical experience does warrant the position I take. I have opened into a pulp chamber, and found the two buccal root canals with the pulps shrunk to a thread. The palatal canal with a larger apical foramen contained a semi-gelatinous mass. Dr. Rippier did not quite understand my point. It was not that the pulp in the root canal changes physiologically, but it becomes contaminated with the secretion from the tissue external to the tooth, after the pulp had shrunk, leaving half the caliber of the root canal unfilled. The secretion that exists about the apical end of the root at the foramen would eventually find its way in and fill it with living serum. That serum will after a time attract germ life, and overcome the antiseptic in the paste and produce decomposition. I have opened many

Dr. Ferris.



ITEMS OF INTEREST

a tooth treated in that manner, and half the tooth has been healthy, and the other half septic.

Dr. Schmidt.

Dr. Barker said that thymol is a powerful antiseptic. I would like him to give me his authority.

Dr. Barker.

I cannot quote authorities. It is a well known fact that all the essential oils, thymol, eucalyptol, cloves and cassia, are antiseptic.

Dr. Schmidt.

Did you not say that Dr. Houghton did not use it on a living pulp?

Dr. Barker.

So far as I know. At the meeting at Newburg he claimed he cut out the bulbous portion and then placed in the paste, whether it was dead or alive. He threw on a hot air stream, and then applied carbolic acid and put the paste right on a living remnant.

Dr. Hutchinson.

I am not positive, but I am under the impression that in an editorial in the *Dental Cosmos* for October Dr. Kirk speaks of the detrimental effect of arsenic on the surrounding tissues. I think he mentioned the retention of a pulp covered with a mummifying paste as bringing about necrosis. That is to my mind the most reasonable argument against its use. If the tissue is saturated with arsenic and remains active, and the foramen is open it permeates the dentine, working its way through so that there may be considerable loss of tissue not only of the tooth but surrounding tissue. If the pulp has been removed, of course the arsenic is removed with it. I have never seen such a case, but I am under the impression that Dr. Kirk mentioned results of this character.

Dr. Rippler.

The arsenical poisoning did it—not the mummifying paste.

Dr. Fanning.

I received a letter from Dr. Barker some months ago asking my experience with this paste. I always consider it poor surgery to leave any tissue in a pulp canal if I could get it out. I sent him a regular table of cases, some as long as five years ago. I have had some failures, but they have been principally in cases where there has been putrescence, and I treated them. As to Dr. Schmidt's statement that arsenic is a preservative, I think it is not.

Dr. Schmidt.

Arsenic preserves tissue; you cannot go beyond that. It is a fact.

Dr. Fanning.

That is one reason I never left any pulp there. I took out every shred. The patients I have lost track of I do not report as successful. I think a man has no business because a case keeps quiet, and he has lost track of his

SOCIETY DISCUSSIONS

patient, to report it as successful. The ones I mentioned as successful, I have kept under observation.

Dr. Rippier.

Would you not be apt to hear from a case, if it were not successful?

Dr. Hanning.

Sometimes the other dentist in the neighborhood gets it. I have opened some cases with gutta percha in, and I never smelled such stinking things in my life.

Dr. Hutchinson.

I just want to mention a little thing which may be of help to some who have bellows such as are used with the Jenkins furnace. If the rubber stem to which your tube is attached becomes detached, and you are left with a bag without any stem to which to attach your tubing, take one of the valve stems, such as is used for the rubber tires on your bicycles, screw it down and you have a perfectly secure attachment.

Dr. Van Woert.

When I came into the room this evening, my good friend, Dr. Schmidt, tapped me on the back and said: "Van, I have just what you want." In fact, it is something we have all wanted for a long time—a reverse mirror. Many years ago, if you will go back almost to the time of the Dental News Letter, or a little earlier, something of this kind was suggested, but never perfected. This comes the nearest to it.

Dr. F. C. Royce read a paper entitled "A Protest Against Open Face Crowns."

Discussion of Dr. Royce's Paper.

Dr. Ash.

When I received Dr. Hillyer's note, asking me to discuss this paper, I naturally supposed Dr. Royce would indorse the method of using open-face crowns, as the title of the paper was then given as "Open-Face Crowns." I see that Dr. Royce has since changed the title to "A Protest Against Open-Face Crowns." I told Dr. Hillyer I would be glad to discuss the paper, but after reading it, I found it did not advocate open-face crowns at all, but was rather an attack upon them, and so I found my thunder stolen. To begin with, an open face crown carries with it the supposition that it is an anchorage, or one end of the anchorage for a bridge. There is scarcely any other reason for it, other than that, beyond the possible exception of building up a corner, which I have known to be done by some men, burning up a piece of pure gold against a corner, backing it up, and filing the corner down so it would appear like a gold filling. I have seen some work like that, and have heard they give good satisfaction.



ITEMS OF INTEREST

However, the method of using an open face crown has never appealed to me as being desirable from any standpoint, scientific, artistic, or practical. In order to retain a bridge, to use an open face crown successfully as an anchorage, one of two things must be done: either there must be left of the front part of the cap enough gold to prevent that cap from being forced up out of its place, or else there must be a step cut in the back of the tooth in such a way that that will prevent the bridge from being forced up. Either of those two methods I consider unwarrantable. In the first place, if you have enough gold showing in an open face crown so it will be carrying out the purpose for which it was intended, it will be very inartistic in appearance, and you would be doing almost as much harm as covering it with a gold cap, which is unpardonable. Dr. Royce has said that the sides of the tooth must be cut away. You must also sacrifice the edges which approximate the back of the open face crown. If that is not done, the bite must be opened all the way around, otherwise it is a natural supposition that it will strike that spot and wear it through.

I have had a case come into my office where the open face crown was used for an abutment, and the operator who did the work evidently had not taken the precaution to make space enough, and the patient had bitten through the back of the crown in a very short time. When the bridge was first put on, it was very uncomfortable for some time, and the tooth which had the anterior abutment of the bridge was very sore; but that passed off after a while. I could see why. She had bitten through the gold. Fluids of the mouth penetrated and the cement washed away, and when I removed the bridge, I found the tooth badly decayed.

There is one exception which I would take to Dr. Royce's paper, and that is, that he evidently makes the presumption that if an open face crown is not used for one of the anterior teeth as an abutment, the resort must necessarily be a Richmond crown. I do not think Dr. Royce meant that, as there are other ways of using the anterior teeth without destroying the natural crown. One better way is to drill into the pulp canal, clean that out thoroughly, and enlarge it, and then use an irridio-platinum post which can be inserted and carried out across to a molar crown or a bicuspid, as the case may be, and this makes a very strong abutment. The tooth can be preserved in appearance and in its entire integrity, except that the pulp is devitalized.

I take it that we all use open face crowns at certain times, when we have to, but I want to make this suggestion: The trouble with an open face crown, no matter how well you fit it, is the lateral strain. It stretches and your cement dissolves. After fitting the open face thoroughly, if you

SOCIETY DISCUSSIONS

will flow a high grade solder and stiffen up the edge, and then thoroughly plate the piece, after it is finished, you will get better results.

Dr. Sutphen,
New Jersey.

I thank you for the discussion on the pulp mummification subject. I was present at the meeting of the New Jersey Society when Dr. Waas read his paper, and was very much interested in it. I tried it for a time, but did not have very much success, and I almost entirely discontinued its use. Since that time we have waited every year for Dr. Waas's appearance to sustain the statements he made, but he never came, although he has been asked several times to do so. We naturally came to the conclusion that it was not a success, and he was afraid to come for a second advocacy.

Last year I called Dr. Barker's attention to the subject. He wrote me a letter, and enclosed letters from other Brooklyn friends, and the records seemed very satisfactory. I wrote Dr. Barker I would come over to the next meeting, and I am glad I have done so.

As far as open face crowns are concerned, I quite agree with the essayist that they are dangerous in the mouth. I have used them in a number of instances. As far as my personal experience is concerned, I have had no trouble, so far as I know; but I have had trouble with crowns that others have put on, and perhaps some of mine have gone in that way, too. There are other ways of getting around the difficulty than using an open face crown, and now I very seldom have recourse to it. Sometimes it seems as though nothing else will serve, and then I use it; but it is always with a great deal of reluctance, and with doubt as to the outcome.

Dr. Nodine.

I would like to ask if, in the opinion of some of the members, a post for anchorage in a lateral tooth is as strong as an open face crown on a lateral tooth to insert a cuspid or probably a cuspid and a bicuspid, having another bicuspid tooth for the other abutment.

The President.

I should prefer cutting off the crown and putting on a Richmond crown. As for open face crowns, I have not had much experience with them.

Dr. Ash.

I do not think the statement of Dr. Schmidt should be allowed to go unchallenged, that we all make use of open face crowns. We do not.

Dr. Engel.

I would like to discuss the subject of cutting off the crowns and putting in posts or using Richmond crowns. I feel when I have this subject before me, inserting a bridge where I have to make use of a healthy tooth—no signs of caries in the anterior portion of the mouth—that I am not justified in cutting off that crown and inserting a Richmond crown as an anchorage



ITEMS OF INTEREST

for any artificial appliance. I think there is a way of getting around it. Take for instance the cuspid, which is the tooth most usually brought up. When we are confronted with the question of making use of the cuspid for an anchorage, and to decide whether we should put on an open face crown, or a Richmond, and we decide upon the open face crown, I think we might just as well in that case cut off that crown, because nine times out of ten you will come to that end anyhow, because the open face crown will cause decay in the future. I never felt that I could advise a patient to have the crown of a tooth cut off to make use of the root as an anchorage to insert a post. Is there not just as much strength in the post which you put into the root and extend fully up to the surface without the crown cut off, as the post which is in the root without a natural crown on that root? I think that is easily answered.

Then we can get around it by Dr. Peeso's method. He has a set of mandrils and drills corresponding in size. The drill, I believe, is slightly larger than the mandril. After the pulp is devitalized, and canal cleaned, the drill is inserted into the canal, and the canal reamed. Around this mandril, which will now readily fit into this canal, a sheet of platinum is rolled and one end is soldered with a piece of plate platinum. That drill being slightly larger than the mandril, taking the correct gauge of platinum, we will now have a tube which will almost perfectly fit into this reamed canal. This tube is really smaller than the canal, as I will explain later. The canal not reamed down to the apex, of course. The piece of platinum tube closed on the end is now inserted with the mandril inside of it into that canal. The upper portion is filled in with gold after the platinum tube has been set with cement. The mandril is withdrawn, it is ground down flush, and you have a canal lined with platinum perfectly sealed and perfect edges. You now have a perfect canal, embodying all the strength for an anchorage perfectly sealed, and no chance for decay. You have a surface beyond the orifice of the canal, which will readily admit a post with a slight shoulder on it, not extending beyond the edge of the gold. I think there you will have a safe anchorage, and it will not be necessary to cut the crown off.

I wish to say that I did not mean to convey the
Dr. Royce. idea that the Richmond crown was the only way of attaching the anterior end of this bridge. Of course there are other methods; but I meant that I used that one. Dr. Engel's method is very nice indeed. As to stiffening up the back of the open face crown, I have done that, and that is where I had all my failures.

Dr. Schmidt. You should stiffen it around the edge, around the opening.

Dr. Royce. I have cut it out of my practice entirely.

SOCIETY DISCUSSIONS

Dr. Kraemer. How long were these crowns on that the essayist mentioned; those that were removed in such bad condition?

Dr. Royce. One I removed was on about two years. The lingual surface was entirely gone. Both the pulps were dead. Another case had been on about a year and a half. It was attached to a cuspid and the sixth-year molar, and decay had extended until the pulp was nearly exposed in that one too.

Dr. Kraemer. Were they sound teeth when they were put on?

Dr. Royce. Yes.

Dr. Kraemer. It has not been my custom to use them, but I have a good many come into my office, and I have some that were on five, six and seven years, and I rarely find any of them decayed. I always heard it was a dangerous thing to do, but I found these were not decayed.

Dr. H. Brandt then read a paper entitled "A Hygienic Bridge for the Lower Jaw, With Method of Construction."

Discussion on Dr. Brandt's Paper.

Dr. Dills. I feel somewhat embarrassed tonight because of the fact that I expected to discuss something new, but this hygienic bridge, without porcelain facings, I think has been used a great many years. In fact, since I have come into the dental profession I have put on a good many, though they might differ somewhat in technique. I have one here that I was going to set last Friday. Dr. Hillyer called me up on the telephone, and I said that that would be a good practical case to show tonight.

This is constructed by making an ordinary band crown swedging up the cusps with the Lowry system, filled in with 18 karat solder, and attached to the abutment with 14 karat solder, and then thoroughly gold-plated. I have constructed here for the anterior attachment an open face crown which we have heard discussed tonight. Since I have been in the profession I have put on some, and I know some good men who have put on some, too. While I have seen some failures, I will keep on putting in open face crowns for some time to come. I would state that for these crowns you grind the teeth down and take the impression and measurements. They are taken in plaster and turned over to the mechanical man with the measurements, and he makes the crown. Insist upon having an impression with the crowns in position, on the plaster, and then finish by swedging the cusp and waxing into place and soldering.



ITEMS OF INTEREST

Gutta Percha Cement. This open face crown I have constructed here with Evan's gutta percha cement for the past year, is made as we usually make them, but I have set them and I think they are all right. When you first use it you will not think it is, but after two or three trials you will be convinced. In regard to getting the labial band in contact with the tooth and getting a perfect fit, we all know that with a live tooth we do not want to destroy the labial surface any more than we can help. The consequences are, we will very seldom get a perfect fit at the time we want to put it on without sacrificing a great deal of tooth substance. I get my cement thoroughly mixed, shove the crown or bridge into position, and before the cement is thoroughly set, take an automatic plugger with a foot instrument and give it two or three blows right on top of the band so as to drive it down, and pull the sides in at the same time, then going around with a burnisher and thoroughly burnishing in the ends. While it may be a little different from Dr. Brandt's method, it is practically the same. It is a very clean bridge, not only on the lower jaw, but they are also adaptable in some cases on the upper. I have two or three large bridges on the upper that are doing good service, and are perfectly cleanly. After it is made, it is thoroughly plated. We plate them generally two or three times, giving them a good long time—fifteen or twenty minutes—in an electro-plating bath. They do not oxydize. Some claim it wears off; but that is only where the attention is, and where they are cleaned well, they will keep bright from friction. (Dr. Dills showed his model.)

Dr. Hillyer. If I did not know Dr. Brandt as well as I do, and had not seen his work in college, I should hesitate about accepting that. It is the finest way of fitting the band to the root, but I should hesitate about fitting them with the contouring pliers.

Dr. Leroy. I think Dr. Brandt's description is rather fair, but he presented nothing that is tangible—that we can handle, as Dr. Dills has presented his method, which we can discuss more intelligently. As Dr. Dills says, that system of bridging a space, leaving the space self-cleansing, is rather ancient, and one that has been in use for some time. The only thing I can see, apart from the regular procedure, is that he says he uses the ordinary rubber work teeth.

Dr. Brandt. That is simply to give the shape to the model. I use an all gold arch. I use the teeth only to give the shape.

Dr. Brewster. I would like to ask Dr. Dills if he ever had any difficulty in getting that sort of bridge in position,

SOCIETY DISCUSSIONS

where those teeth stand so close, and at different angles.

Dr. Dills.

That goes into position very easily; put it on the molar first and it goes into position readily.

Dr. Myers.

I have had a bridge very similar to this one within about ten days, and I do not think there will be any difficulty in getting that bridge on.

Dr. Royce.

Dr. Dills said when he puts his open face crown on, he takes a foot plugger and mallets the band around the neck of the tooth. Does it not make it bulge out on the sides?

Dr. Dills.

No; I do not do it all around, only at the gum margin in front. That will push that part down, and the sides too.

Dr. Ash.

I have not for nearly seven years put on a bridge back of the first bicuspid and used any facings on it at all. The method which I employ is—after having made the crowns—to take a piece of very heavy clasp gold and make a span; then make the tops, fill them in with solder and then turn the arch under that, after it has been soldered.

**Dr. Ferris Gutta
Percha Cement.**

I wish to add one word in favor of Dr. Evan's gutta percha cement. I have used it since it came out in long bridges and single crowns, and have had considerable trouble; but it worked out all right. If I may make a suggestion to those who have not used it, it would be this: in setting with gutta percha cement you need to have a pillar in the center of your crown. If you do not, the gutta percha will gradually press out of shape. In the course of three or four months it will work up under the gum tissue and produce gingivitis, sometimes quite acute, because it does not dissolve, and the gum, if forced too high, will not tolerate it. But if you place a little cement in the grinding surface of the crown, while you are fitting the gutta percha the first time, the root being wet, you force it into position and the cement will set; remove and add what more gutta percha you need, and when your bridge is finally set, the cement pillars rest upon the posts and prevent any movement of the bridge toward the gum tissue, thus obviating this difficulty.

Dr. Van Woert.

I had intended to say nothing, but I feel that it is due Dr. Evans that there should be more said regarding this gutta percha cement of his for the setting of crowns and bridges. There is no question but that it is the cement par excellence for setting crowns. The question of its solubility remains to be



ITEMS OF INTEREST

tested, because it is comparatively a new thing; but I believe from all observations that it is practically insoluble. If that is so, the ease with which it is manipulated and the accuracy with which you can adjust either a crown or bridge makes it one of the most desirable adjuncts to our dental cabinet. I think Dr. Ferris's remarks and Dr. Dills's did not cover the ground entirely. The adjustment of the gutta percha cement itself to the root and crown is a very easy matter. The matter of deficiency is made up by the addition of more, and an excess is squeezed out, but in the final setting there is with that cement a varnish, made, I presume, of chloroform and Canada balsam, or something like that with which the root and surrounding parts are coated, and when once put into position, unless sufficient heat is used, it is almost impossible to dislodge it. If you do not believe it, take a root out of the mouth and experiment. If you pull them apart by main force, you have broken the cement, but you have not broken its contact with the root and the crown. That is an important feature and one I think we all ought to bear in mind, because it goes far toward supplying stability for these open face crowns that we have heard spoken of tonight. I believe with that cement open face crowns are a possible and practical adjunct to a bridge or a restoration of occlusion in those broken down teeth that we try to build up with foil, and which are always a failure.

Dr. Ferris.

Did Dr. Van Woert say it would not change its place when finally set?

Dr. Van Woert.

No, sir; not when finally and properly set.

Dr. Ash.

I think I can set them as well as anybody can, and I will have to refute that. I have set a bridge with eight teeth, and it has been set well, with a good occlusion, but the force of mastication came on one side of the mouth—on that bridge particularly. The gutta percha went up under the gum tissue between and above the gold caps and produced gingivitis about the necks of those crowns. If the force of mastication will do that, I believe you must protect it from being moved by something that is not soluble or malleable. Gutta percha will yield under pressure and there must be room there to fill the space. If the stress of mastication on the gutta percha is great, it will cause it to move. That is my experience.

That is wrong. Dr. Evans says the bridge or

Dr. Van Woert.

crown must be carried direct to the root. It is impossible to make the band fit the root perfectly, but the cap of the band should rest on the root direct. He dwells at length on the fact that it must be put in and taken out, until you cannot go any further. That is the object of the varnish—so it will adhere there. If

SOCIETY DISCUSSIONS

an excess of gutta percha is the means by which it would be held in place, what is the use of the other?

Dr. Ferris. Dr. Van Woert does not understand me. If one of your posts is a little shorter than your occlusion and you set your bridge with its normal occlusion, you have a cushion of gutta percha cement between the grinding surface and the end of the root; that cushion will gradually force out of its position, in spite of the fact that you have your varnish on the root of the tooth on which you are setting the crown. It is simply a matter of the comparative strength of the cement and gutta percha. The gutta percha will move under constant pressure. You must put a cement or metallic post in the center of that gutta percha pad to prevent the bridge moving under the stress of mastication.

Dr. Ash. I must take exception to the statement just made. I think if the bridge is properly constructed, it cannot do that very thing—it cannot force the gutta percha out. If one of the posts in the abutment is too short, make a new bridge and put in a new post. A bridge should be so constructed that when it is put on the abutments, before any cement is put in, it must set there snug, just as it will be when it is finally set. It must be so placed and the bridge so made that it is tight against your abutments. At some point the inside of the gold crown must come in contact with the crown of the tooth which is used as an abutment; or if the abutment is a Richmond crown, with a post, then the backs will touch at various points and cannot go any further. I do not see where there can be enough cushion between the crown and the crown of the tooth, where you could force an excess of gutta percha out after it is once there—at the neck of the tooth, I mean.

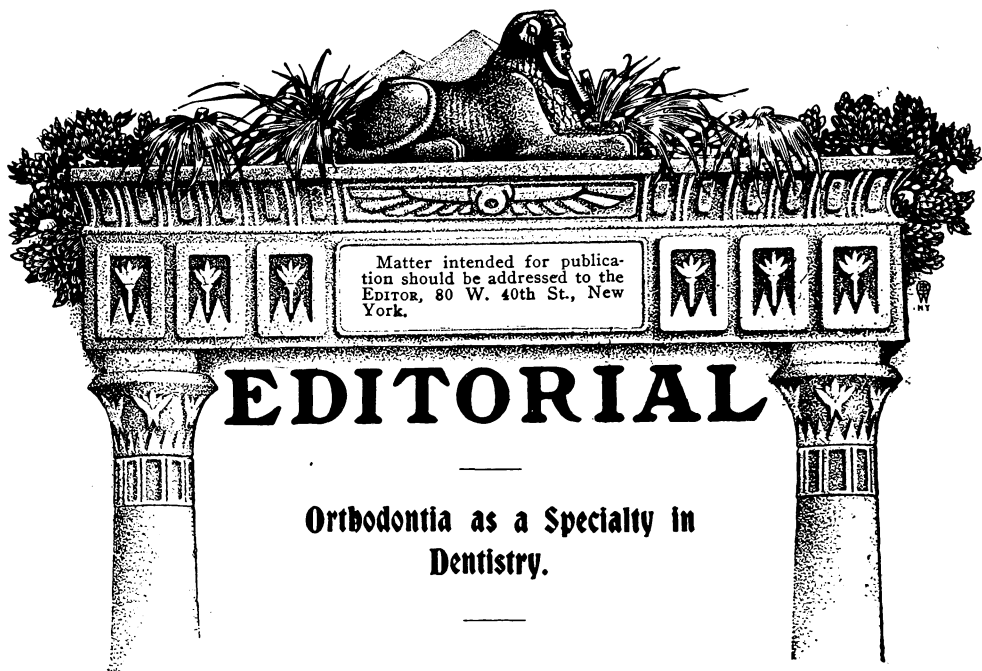
Dr. Brandt. I thank you all for the discussion of my paper. I am really glad to hear that so many have been using this bridge, although I did not know of it. The way I commenced to use it was: a patient came in who had an operation performed in the lower jaw, I think, and there was a necrotic condition of the mucous membrane on that side. There were three teeth missing. The question was, what could be done for that patient to make her comfortable and restore the usefulness of the mouth? Of course, my preceptor said a plate should be made—not a bridge at all, with L clasps on those teeth. I insisted on making an arch bridge, so there would be no doubt that the mucous membrane would be preserved without any pressure, because the least little pressure, even with the L clasp, would cause more atrophy. I decided on this bridge. When I saw the working of it, I said, why cannot I use it in other cases where there is no atrophy? It acts ad-

ITEMS OF INTEREST

mirably and is cleaner than any other bridge. I have made quite a number of them. With intelligent persons I can reason and explain these things, but some patients want their money's worth, and if it does not reach down to the mucous membrane, they think they are not getting all they pay for.

There has been some controversy about the setting of the bridge and forcing out some of the setting material. Your bridge must fit perfectly. If you use your automatic mallet, see that the plate is well brought down so there is no perceptible space for a poor joint. I do not see how the setting material can be forced out after the bridge is made and set. Whatever you choose, the bridge goes on with the material in there, and you tap your edges down under the free margins of the gum with the automatic mallet, whether with cement or Evans's gutta percha.





At the last meeting of the American Society of Orthodontists a resolution was passed restricting future membership in the Society to men of two classes. A candidate must either be practicing orthodontia exclusively or else he must be a teacher of orthodontia in a dental school. It may seem to some at first that this restriction is arbitrary and short sighted, but considering the aims of this society, it is more than probable that the best results will be subserved by this action.

The formation of this society was due to the observation of a few men interested in the advancement of orthodontia as a science, notably Dr. Edward Angle, that at the meetings of the National Dental Association and of other societies devoted to the general practice of dentistry, scant interest was evoked by papers relating to orthodontia or as they were more generally entitled to the "regulation of teeth." And here a discrimination may be made. The "straightening" or "regulation" of teeth has always been more or less a part of the practice of the general practitioner and



ITEMS OF INTEREST

with very few exceptions the straightening or regulation of teeth is about all that a general practitioner ever accomplishes.

Orthodontia as practiced by the specialist of to-day means not only something more but something totally different from the mere straightening or regulation of teeth. The tooth regulator, for example, finds a cuspid apparently prominent in the arch, and in order to "straighten" it, he extracts a good, sound first bicuspid, and either leaves the rest to Nature or else stretches on a rubber strap and drags the cuspid into the space thus made, which it usually will only partly fill. To the mind of the orthodontist such work is little short of malpractice; indeed, a new word has been coined for such dentists. In future they will be known as "odontocides," or men who wantonly destroy teeth. In the presence of the same condition of affairs, the orthodontist would probably recognize at a glance that the seemingly prominent cuspid is the only tooth in the arch approximately in its proper position, and he would move every other tooth into an alinement therewith, and more particularly he would aim at restoring both arches to their normal forms and diameters with the correction of malpositions of all teeth so that proper occlusion would be attained.

Thus the work of an orthodontist is special in character and there is a growing list of men who purpose exclusively to devote themselves to this field. These men, aiming to build up a literature for orthodontia, have only a comparative interest in meetings devoted to general dentistry. Conversely they feel that the general practitioner can have but a moderate interest in orthodontia as a science, and therefore they have thought that it would be advisable to limit the membership in the American Society of Orthodontists to those whose whole thought can be concentrated upon the one object which is the aim of the organization, and this has been done without any intended discourtesy towards the general practitioner.

Ethical Problems Between Dentist and Orthodontist.

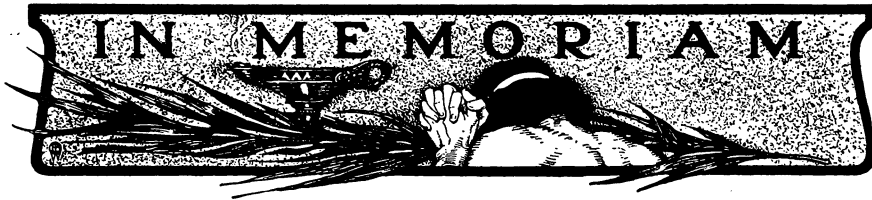
In separating orthodontia from the general practice of dentistry and in pursuing it as an exclusive specialty, the orthodontist has met with one unfortunate difficulty. The question is to find an absolute dividing line between the work which he should perform and that which ethically he would be bound to return to the general practitioner who perhaps had recommended a patient. It



is easy enough to say that the orthodontist will correct the malpositions of the teeth and that the general practitioner will do such fillings as may be required, but not infrequently cases will arise where the restoration of occlusion would require a definite and full restoration of the contour of some decayed tooth. In all ordinary discussions on contour fillings it is noteworthy that by "contouring," the dentist usually means lateral contour. We hear a great deal about protecting the gingivæ in the interproximal space by full restoration of contact points, all of which is good doctrine; but this kind of contour aims entirely at preventing a recurrence of caries. Contour from the standpoint of the orthodontist has a broader significance; he requires full lateral contour in order to keep a restored tooth in its proper position in the arch, but he also demands proper contour of the occlusal surface in order to achieve correct occlusion with an antagonizing tooth without which he has come to learn that no retaining fixture will make permanent the correction of the malpositions. This same line of argument holds good in relation to the bridging of spaces in order to restore the full complement of teeth in the arch. Many bridge workers would feel that anything which occupied the space would do, but this "anything" would frequently be worse than nothing from the standpoint of the orthodontist.

In the light of the problem here outlined, we may advise the general practitioner to make a more profound study of the true significance of occlusion and to learn to build his contour fillings and to construct his crown and bridge work in accordance with the laws of occlusion. To the specialist in orthodontia we would recommend that he should at all times remember that his final duty is to the patient, and if he has the slightest belief that work required in the mouth would not be done by the recommending dentist in such manner as he would consider requisite, he should then frankly state to such dentist that the work upon the particular teeth in question would become a part of his own procedure; but this, of course, involves the necessity for the orthodontist to be himself thoroughly capable as a general practitioner.





Harold S. Bliss.

"In Memoriam" Resolutions Adopted by the Racine Dental Society.

Whereas, We have been grieved to know of the removal from this life of one who as a boy and man we had learned to respect and love, whose promise of future usefulness in our chosen profession bespoke a flattering career as student and practitioner, we deem it fit and proper at this time to pay our tribute of respect to his memory and to voice our sorrow at his loss; therefore be it

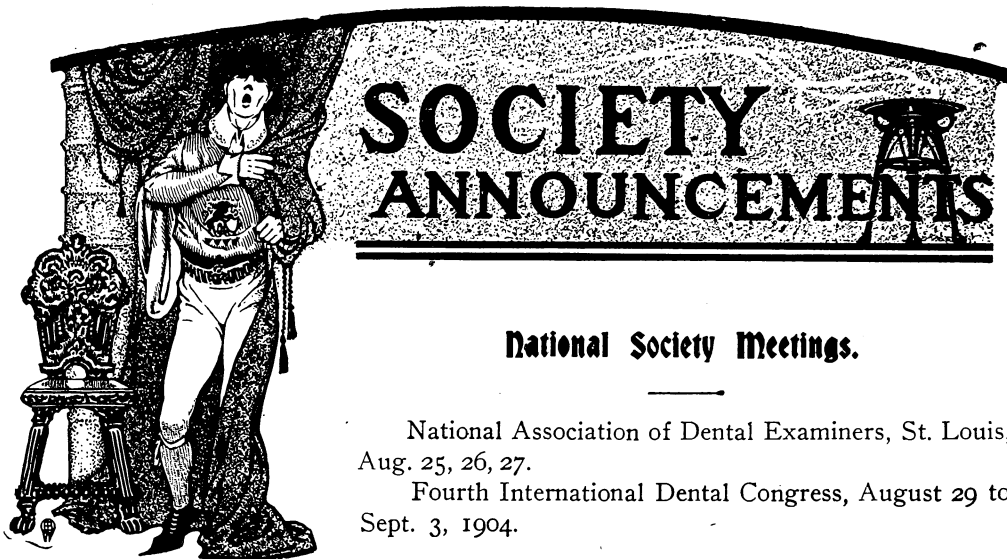
Resolved, By the Racine Dental Society that in the death of Harold S. Bliss our community has lost a man of sterling worth and our profession a student and worker whose progress in the profession was a source of pride to the Faculty and his friends. We deplore his untimely death and offer to his stricken mother and family our deepest sympathy in their sad bereavement. May the years to come soften the bitterness of their grief in the assurance that this noble soul has returned to his God.

Resolved, That this resolution be engrossed and forwarded to his mother, and a copy furnished to the dental journals and the local press for publication.

F. L. CLIFFORD, President.

W. H. FANCHER, Secretary.





National Society Meetings.

National Association of Dental Examiners, St. Louis,
Aug. 25, 26, 27.

Fourth International Dental Congress, August 29 to
Sept. 3, 1904.

State Society Meetings.

California State Dental Society, San Francisco, May 16, 17, 18.
Connecticut State Dental Association, Hartford, April 19, 20.
Delaware State Dental Society, April 6.
Florida State Dental Society, Atlantic Beach, May 25.
Georgia State Dental Society, Athens, June 28.
Illinois State Dental Society, Peoria, May 10, 11, 12.
Indiana State Dental Association, Indianapolis, June 28, 29, 30.
Iowa State Dental Society, Des Moines, May 3, 4, 5.
Kentucky State Dental Association, Louisville, May 17, 18, 19.
Maine Dental Society, Bangor, July 19, 20, 21.
Massachusetts Dental Society, Boston, June 1, 2.
Minnesota State Dental Association, St. Paul, June 16, 17, 18.
Mississippi Dental Association, Jackson, April 19, 20, 21.
New Jersey State Dental Society, Asbury Park, July 21, 22, 23.
New York State Dental Society, Albany, May 13, 14.
North Carolina Dental Society, Morehead City, June 22-25.
Texas State Dental Association, Corsicana, May 5, 6, 7.
Utah Dental Association, Salt Lake City, April 4.
Vermont State Dental Society, Montpelier, March 16, 17, 18.
Washington State Dental Society, Seattle, May 26, 27, 28.
Wisconsin State Dental Society, Manitou, July 19-21.





New Haven Dental Association of Connecticut.

The annual convention of the New Haven Dental Association will be held March 15 and 16 at Harmonie Hall, New Haven, Conn.

This promises to be the largest meeting ever held in the East, a large number of clinics and one of the finest exhibits ever shown.

Essays by the following distinguished members of the dental and medical profession. Drs. R. Ottolengui, New York; Henry C. Bœnning, Philadelphia; G. Lenox Curtiss, New York; Herbert L. Wheeler, New York; R. A. McDonnell and Wm. H. Metcalf, New Haven; J. Wesley Shaw, Springfield. A large clinic from residents of New York, New Jersey, Philadelphia, Massachusetts and Connecticut and two surgical clinics provided suitable cases are presented. The business meeting will be disposed with, thereby allowing ample time for the thorough discussion of all papers.

It will amply repay all to attend this convention, and enable those who have never had an opportunity to visit the Elm city, the privilege of the freedom of Yale University and the Campus.

The entertainment committee have been especially active, having arranged for a banquet on the evening of the first day, and in addition are arranging with the N. E. Passenger Association for a one and a third rate on the certificate plan, provided one hundred tickets are sold for seventy-five cents or over. (Secure certificates when purchasing tickets.)

An invitation is extended to all ethical practitioners to join with us and take active part in our meeting.

New Haven, Conn., Feb. 8, 1904.

FREDERICK H. BROWN, President.

E. FRANK COREY, Secretary.

Seventh District Dental Society of the State of New York.

The thirty-sixth annual meeting of the Seventh District Dental Society of the State of New York will be held at the Osburn House, Rochester, N. Y., on Tuesday and Wednesday, March 29-30, 1904. There will be a number of very good papers on the programme, also a number of clinics. If you have anything that would be of interest to the profession, kindly notify the Business Committee and we will be pleased to place you on the programme.

G. G. BURNS, Chairman, Rochester, N. Y.

I. C. EDINGTON, Rochester, N. Y.,

F. A. GREEN, Geneva, N. Y.

Business Committee.



New York State Dental Society.

The thirty-sixth annual meeting of the New York State Dental Society will be held at Hotel Ten Eyck, Albany, N. Y., Friday and Saturday, May 13 and 14, 1904. Special rates have been secured at the hotel Ten Eyck and The Kenmore. Special railroad rates on the certificate plan have been arranged with the Trunk Line Association. The business committee have prepared a most excellent programme with essays by the following well known and prominent men of the profession, which assure to all who attend an unusual instructive and interesting meeting, viz.:

Dr. E. N. Jenkins, Dresden, Germany. Subject: "Porcelain." Dr. Head, Philadelphia. Subject: "Porcelain." Dr. C. H. Land, Detroit. Subject: "Porcelain." Dr. D. D. Smith, Philadelphia. Subject: "Pyorrhea Alveolaris, Its Causes, Sequels and Cures." Dr. Geo. E. Hunt, Indianapolis, Ind. Subject: "Prophylaxis." Dr. B. Holly Smith, Baltimore, Md. Subject: "Gold as a Filling Material, Is It Still Important?" Dr. W. J. Turner, Brooklyn, N. Y. Subject to be announced. Dr. C. W. Stainton, Buffalo. Subject: "Our State Society, a Study and an Appeal." Dr. I. M. L. Waugh, Buffalo. Subject: "The Pericementum," with a lantern slide demonstration. Dr. A. H. Peck, Chicago, Ill. Subject to be announced.

Fellow practitioners conversant on the various subjects announced will open the discussions.

Exhibitors desiring space will please address Dr. J. L. Appleton, 89 Columbia Street, Albany, N. Y.

R. H. HOFHEINZ, D.D.S., President, Rochester, N. Y.

W. A. WHITE, D.D.S., Secretary, Phelps, N. Y.

Los Angeles Association of Dental Alumni.

The regular monthly meeting of the Los Angeles Association of Dental Alumni for December took the form of a banquet at Hollywood, Tuesday evening, December 1. The members of the association with their wives and lady friends, made the seven-mile trip to Hollywood in a special trolley car, where a dinner was served at the Hotel Hollywood. After dinner there was an open discussion on the subject of the evening, "Pressure Anæsthesia," which brought out many valuable suggestions and arguments both for and against its practice. Following the discussion was the annual election of officers. The following officers were elected for 1904: President, Dr. J. F. Coop; Vice-President, Dr. J. W. Gray; Secretary and Treasurer, Dr. G. M. Crow; Corresponding Secretary, Dr.



ITEMS OF INTEREST

J. F. Curran; Member Board of Directors, Dr. O. P. Roller. The total membership of the association is sixty, with fifty-five active, four associate and one honorary member. The meetings are held the first Tuesday in each month, at the offices of the different members with an occasional banquet interspersed to help along the social spirit. The January meeting was held at the office of Dr. C. M. Benbrook. The programme for the evening was an open discussion on "Erosion and Abrasion," and an interesting and instructive evening was enjoyed by those present.

Los Angeles, Cal.

J. F. CURRAN, Cor. Secy.

The American Dental Society of Europe.

The next annual meeting of the American Dental Society of Europe will be held at the Hamburger Hof, Hamburg, Germany, April 1 to 4, 1904.

Wiesbaden, Germany.

DR. CHAS. J. MONK, Secy.

Vermont State Dental Society.

The twenty-eighth annual meeting of the Vermont State Dental Society will be held at Hotel Pavilion, Montpelier, March 16, 17 and 18, 1904. We anticipate a pleasant as well as a profitable meeting, and a cordial invitation is extended to all.

Rutland, Vt.

THOMAS MOUND, Secy.

Southern Dental Society of New Jersey.

At the annual meeting of the Southern Dental Society of New Jersey, held at Camden, N. J., Wednesday evening, January 20, the following officers were elected: President, Alphonso Irwin, Camden; Vice-President, W. A. Jaquette, Salem; Recording Secretary, Stanley Ironside, Camden; Corresponding Secretary, Cromwell Ironside, Camden; Treasurer, Mary Morrison, Salem; Librarian, J. G. Halsey, Sweedesboro. Executive Committee: W. W. Crate, Camden; J. G. Halsey, Sweedesboro; Chas. P. Tuttle, Camden; Chas. P. Tuttle, Jr., Philadelphia; E. E. Bower, Camden; O. E. Peck, Bridgeton. Membership Committee: Alphonso Irwin, W. A. Jaquette, W. H. Gelston, the latter of East Camden.

Camden, N. J.

W. W. CRATE Chairman Ex. Com.



Utah Dental Association.

The tenth annual meeting of the Utah Dental Association will be held in Salt Lake City on April 4, 1904. All members of the profession are cordially invited to attend.

Ogden, Utah.

S. W. WHERRY, Secy.

Delaware State Dental Society.

A regular meeting of the Delaware State Dental Society will be held on April 6. Time and place to be determined by Executive Committee. Wilmington, Del.

R. H. JONES, Secy.

Connecticut State Dental Association.

The fortieth annual meeting of the Connecticut State Dental Association will be held at Hartford, Tuesday and Wednesday, April 19 and 20, 1904.

Bridgeport, Conn.

F. HINDSLEY, Secy.

Mississippi Dental Association.

The eleventh annual meeting of the Mississippi Dental Association will be held at Jackson, Miss., April 19, 20 and 21, 1904. The programme will be a very profitable one. Visitors are cordially invited.

Hattiesburg, Miss.

T. B. WRIGHT, Secy.

Kentucky State Dental Association.

The coming annual meeting of the Kentucky State Dental Association promises a dental convention of unusual interest to be held in Louisville, May 17, 18 and 19.

Members of the profession are extended a hearty welcome.

Masonic Building, Louisville, Ky.

W. M. RANDALL, Sec'y.

The Kanawha Valley Dental Society.

The dentists of Charleston, W. Va., met on January 4 and organized the above society. Dr. J. N. Mahan was elected President; Dr. Gwynn Nicholson, Vice-President; Dr. H. S. Barr, Secretary and Dr. F. R. Butts, Treasurer. Any ethical practitioner in Kanawha Valley is eligible for election to membership.





Texas State Dental Association.

The Texas State Dental Association will hold its twenty-fourth annual session at Corsicana, Texas, May 5, 6 and 7. All ethical members of the profession are invited to meet with us.

Dallas, Texas.

BUSH JONES, Secy.

Texas State Board of Dental Examiners.

The Texas State Board of Dental Examiners will hold its next examination in Corsicana, Texas, beginning May 9 at 10 a. m. Applicants will be examined theoretically and practically and must come prepared to do operative work, furnishing their own materials, instruments and patients. For further information address,

Hillsboro, Texas.

Dr. C. C. WEAVER, Secy.

The National Association of Dental Examiners.

Notice to the members of the National Association of Dental Examiners.

To those who desire copies of the proceedings of the meeting held at Asheville, N. C., 1903, it will be necessary for their secretaries to send in their names and address to the undersigned.

The secretary does not possess occult powers and after two notices in the journals during the year, but nineteen States have responded.

CHAS. A. MEEKER, D.D.S., Secy.,

29 Fulton Street, Newark, N. J.

Massachusetts Board of Registration.

The next meeting of the Massachusetts Board of Registration in Dentistry for the examination of applicants will be held in Boston, March 9, 10 and 11, 1904.

Application blanks and all necessary information furnished by the secretary.

G. E. MITCHELL, Secy.,

25 Merrimack Street, Haverhill, Mass.



Minnesota State Board of Dental Examiners.

The Minnesota State Board of Dental Examiners meet for the purpose of examining applicants for license April 5, 6 and 7, 1904. No application received after 12 m. April 5.

Meeting held at dental department of State University at Minneapolis.

Wabasha, Minn.

C. H. ROBINSON, Sec'y.

Eastern Dental Society of the City of New York.

The twenty-fifth regular monthly meeting of the Eastern Dental Society of the city of New York was held Thursday, February 4, with an exceedingly large attendance. A paper was read by Dr. C. S. McNeille, head operator of the Colton Dental Association on "Practical Points on Extraction." The paper was well received by the Society and was freely discussed. The next meeting will be held March 3 at Clinton Hall, Clinton near Grand street.

DR. J. SOOKNE, Sec'y.

Class of '95 N. Y. C. D.

The regular annual reunion of the Class of '95 of the New York College of Dentistry will be held Saturday evening, April 16. Members of classes of '94 and '95 are cordially invited to participate. Full particulars will be sent to all members of these classes, sending their addresses to Dr. F. C. Brush, Chairman, 1183 Broadway, New York.

Dental Board of New South Wales.

Dentists' Act No. 45 of 1900. Election of members of Dental Board.

I the undersigned hereby give notice that the following persons were the successful candidates at the recent election of the Dental Board of New South Wales, held on December 18, 1903, viz.:

Medical Practitioners—Sir James Graham, K.B., M.D. Arthur Palmer, M.B., F.R.C.S.

Dentists—Henry Peach, D.D.S.; Cornelius Charles Marshall; Charles Hall; Charles George Hodgson.

And I hereby declare the said Sir James Graham, Arthur Palmer, Henry Peach, Cornelius Charles Marshall, Charles Hall and Charles George Hodgson to be duly elected as members of the Dental Board of New South Wales.

Witness my hand at Sydney this nineteenth day of December, 1903.

HORACE TAYLOR, I.P., Returning Officer.





Transvaal Dental Society.

The annual meeting of the above has just been held. The following were elected: President, H. Fielden Briggs, M.D., L.D.S., D.D.S.; President-elect, W. J. Trembath, L.D.S., Eng.; Committee: W. Sandford Cottrill, D. W. Sims, W. D. Quinn, L.D.S., D.D.S., W. Taylor, D.D.S.; Representatives: Pretoria, W. F. Tullock, L.D.S., Heidelberg, W. Sandford Cottrill; Hon. Secretary and Treasurer, A. M. Holloway, P. O. Box 5528 Johannesburg; also W. Marsh, L.D.S., of Natal, as honorary member.

The past year shows an increased membership, and various papers and demonstrations have been given by the members, in addition to papers by H. Temple Mursell, M.B., F.R.C.S., and A. R. Friel, M.D., F.R.C.S.I. A great part of the time of the monthly meetings has lately been taken up in drafting a new dental act. This, *inter alia*, prevents the actual practice by unregistered dentists or companies. Even at the present time the law in force provides against the *practice*, as well as the use of titles by unlicensed persons, and two convictions have been obtained for *practicing* without a license. The qualification necessary for obtaining which is that the applicant shall be entitled to be registered as a dentist in Great Britain.

